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The very large number of extra Diaries which has this year been ordered has quite exhausted our stock. We cannot supply any more copies.

The Pharmaceutical Council was mainly engaged at the January meeting in discussing a proposal made by Mr. Hampson, advocating the formation of a small committee, with an ultimate object of amending the Pharmacy Act, so as to check the dispensing of medicines by public companies and co-operative stores. Mr. Sandford was strongly opposed to any attempt at tinkering the Pharmacy Act, but the committee was agreed to.

The Chemists' Defence Association has had an opportunity of displaying its usefulness by the defence of some chemists at Runcorn, charged under the Adulteration Act with the crime of selling milk of sulphur, the article which, it was admitted, was asked for. The defence seems to have been perfect, the evidence in favour of the chemists overwhelming, but the magistrates decided for the prosecution. The decision was appealed against, and the second trial came on at the Knutsford Quarter Sessions some 10 days since. It was, however, remitted until the Spring Sessions, and will probably not be tried before April. We publish a special report of the first trial. The evidence of Professor Redwood and Mr. Oliver Pemberton is very important.

Two similar cases were brought forward at Salford on the 3rd inst. Mr. Glaisyer, for the Chemists' Defence Association, again appeared, and requested that the cases might be allowed to stand adjourned until the appeal in the Runcorn cases had been heard. This request was granted.

The Chemists' and Druggists' Trade Association held a very successful meeting at Manchester last month, when Mr. Barclay, from Birmingham, and the secretary of the association, Mr. W. F. Haydon, advocated the claims of their society. The membership of the Association has now reached about 1,900.

Mr. Fairlie read a paper at Glasgow last month, replying to the criticisms of Mr. Frazer on the Chemists' Trade Association. The meeting fully coincided with Mr. Fairlie.

At Marlborough Street, last month, before Mr. Knox, the Medical Defence Association sued a Dr. John Hamilton, of 404 Oxford Street, under the Medical Act of 1868, for pretending to be, and using the name and title of, a doctor of medicine. The defence was that Hamilton had only pretended to be what he was, namely, an M.D. of the Metropolitan College of New York; that he exhibited this diploma in his window; and that consequently there had been no intention to deceive the public. The magistrate admitted the force of this defence, and dismissed the summons "with regret."

The Medical Defence Association was more successful in another case at the same court. A detective went to the shop of a certain H. T. Lewis, 102 Wardour Street, and asked for Dr. Bell, in whose name the practice was carried on. Lewis said he was Dr. Bell, and handed to the detective a card with Dr. Bell's name and title inscribed upon it. He then proposed to treat the case, and offered to give the detective some medicine, the cost of which would be 6s. Dr. Bell had been dead many years. Mr. Knox said this was a clear case of violation of the law, and he fined Lewis 20l. and 23s. costs. This case was brought under the Medical Act.

The same association successfully prosecuted an unqualified practitioner at Sunderland under the Apothecaries' Act, and recovered a penalty of 20l. More prosecutions of unqualified men are threatened at Birmingham.

A "prescribing" chemist, named Frederick Nicholls, of Green Street, Victoria Park, has been fined 20l. under the Apothecaries' Act. The defence was that the chemist was acting for a registered medical practitioner, but the evidence was insufficient.

An inquest held on the 20th ult. disclosed a curiously dangerous condition of affairs at one of the smaller London hospitals. A young man, named Randal, having a bad cough was "prescribed for" by a housemaid at the Chelsea Hospital for Women, who knew him slightly. She had herself had some little pills given her for a cough, and, seeking in the dispensary, she found some others of about the same size, which she gave to Randal. He took four of them, and died. They each contained 1 grain of opium.

We have to report a case of attempted murder by a druggist's assistant, and a remarkable case of fraudulent bankruptcy by a chemist and druggist.

A boy named William Dodd, aged 13, was tried at the Exeter Assizes on December 22, charged with having mixed a quantity of Cooper's Sheep Dipping Powder with some flour in the cupboard of his master, Mr. Moysey, a farmer at Dartington, Totnes, with intent to murder. The prisoner had admitted having mixed the poison with the flour. The jury found him guilty, recommending him to mercy on account of his youth. He was sentenced to six weeks' imprisonment, and three years in a reformatory.

On the morning of the 10th inst., at about a quarter-past 2, a fire occurred on the premises of Messrs. C. W. Smith & Co., drug grinders, 5 Lamb's Passage, Chiswell Street, Finsbury, caused by the overheating of an apparatus used for drying in

the preparation of drugs. A large quantity of drugs were burnt, and the drying machine, a very complicated and expensive apparatus on the first and second floors, was very considerably damaged by fire. The fire was speedily extinguished, but the contents of the premises were a good deal spoilt by heat, smoke, and water. The sufferers are insured. A little more than an hour later the overheating of a boiler set fire to the premises of Messrs. Goundry & Co., wholesale tea dealers, Upper Thames Street. A considerable quantity of coffee was spoilt by the fire, but the flames were extinguished before they had gained any very firm hold.

At the meeting of the Irish Pharmaceutical Council on the 3rd inst. there was little but formal business transacted. Mr. Hodgson moved that the registrar be authorised to send to the morning papers, the day after the meeting of the Council, a short *résumé* of the proceedings, and that no member of the Council be at liberty to send any report to the papers purporting to be an authorised report of those proceedings. After a short discussion this proposition was withdrawn.

At a meeting of Irish pharmaceutical chemists, held at the Molesworth Hall, Dublin, on December 13, it was resolved that a defence association be organised for the purpose of preventing any infringement on the rights of pharmaceutical chemists. The annual subscription agreed upon was 10s. Mr. Hartford, 91 Bride Street, Dublin, is treasurer *pro tem.*, and Mr. J. T. Holmes, secretary *pro tem.*

A bill has been introduced into the French Parliament, the object of which is to permit no physicians to practise in France without holding a diploma from the French faculty. Those at present established would be allowed to remain. If this bill should be carried, it is possible that the medical profession in France may secure an infinitesimally small share of additional practice, while coincidentally the fashionable French towns of residence will be gradually ruined. This is essentially French political economy.

"Owing to the indifference with which every endeavour to further the objects of the (Manchester Chemists' Assistants') Association has been met by the assistants of Manchester," the affairs of that association have been wound up, and the balance in hand paid over to the library fund of the Manchester Chemists' and Druggists' Association. This was announced at a recent meeting of the latter body.

The amount of revenue derived from "patent medicines" during the year ending March 31 last was 123,136*l.* 9*s.* 10½*d.*, the actual number of stamps issued being 15,873,931.

Professor Wöhler has been elected president of the German Chemical Society for the current year.

The next meeting of the Chemical Society will be held on Thursday, January 18, at 8 p.m. The following papers are announced:—"Preliminary Account of some New Reactions in Organic Chemistry and their Ultimate Bearings," by C. F. Kingzett and H. W. Hake; "On Kekulé's and Ladenburgh's Benzene Symbols," by H. E. Armstrong; and "On Nitrocecin," by J. Stenhouse and C. E. Groves.

Good-looking pharmacutists are reminded of the Chemists' Ball on the 17th inst. at Willis's Rooms. It is to be hoped that a full house will assemble on that occasion to do honour to the first year of Mr. Walter Hill's secretaryship.

The Liverpool Chemists' Association will hold their thirteenth conversazione on the 18th inst., when a scientific and artistic entertainment will be provided. Mr. W. E. Bickordiko, F.C.S., will deliver a popular lecture with experiments on the atmosphere.

MEDICAL NOTABILITIES.

WE have had the fancy to group together seven eminent London physicians and surgeons, each of whom has won a title in consideration of his professional ability. If these men had been the mere inheritors of this flimsy honour we would not have burdened our pages with their portraits, but from the slight sketches we give of them it will be seen that each has fought his way to eminence by hard work and all-conquering perseverance. We may follow this group with others of noted doctors if the idea should be approved by our subscribers.

SIR GEORGE BURROWS, the late president of the College of Physicians, is the son of a physician, and was born in 1802. He was educated at Cambridge, and before taking his medical degree was Mathematical Lecturer at Caius College of that University. Oxford has made him a D.C.L., and he is also F.R.S. He presided over the General Medical Council for six years, representing there the London College of Physicians. He is a physician to St. Bartholomew's, and has been Lecturer on the Principles of Medicine in the Medical School of that institution. He was appointed Physician-Extraordinary to the Queen in 1870, and was granted a baronetcy in 1874. "Et vi et virtute" is the motto attached to his crest. Sir George Burrows is the author of a noted work on "The Cerebral Circulation and the Connection of Diseases of the Heart and Brain."

SIR WILLIAM FERGUSON is F.R.C.S. both of London and Edinburgh. He was born at Prestonpans, East Lothian, in 1808, and after a few years at the grammar school of Lechnabeu he went to the Edinburgh High School, and thence into the University. About a year after the commencement of his professional studies he became confidential assistant to two of his most eminent teachers, Dr. Knox and John Turner. He was connected with Dr. Knox for about nine years, and then received the appointment of Assistant-Surgeon to the Edinburgh Royal Infirmary. A few years later (in 1840) he came to London, and was appointed Professor of Surgery in King's College and Surgeon to King's College Hospital. He was made Surgeon-in-Ordinary to the Prince Consort in 1849, Surgeon-Extraordinary to the Queen in 1855, and Sergeant-Surgeon to Her Majesty in 1867. In 1865 the honour of a baronetcy was conferred upon him "in consideration of distinguished merit and eminence as a surgeon." He was made president of the Royal College of Surgeons in 1870, and holds, or has held, a great number of other honourable appointments. His contributions to special surgical literature refer chiefly to lithotomy and cleft palate. Sir Wm. Fergusson's motto is "Vi et arto."

SIR WILLIAM WITNEY GULL was born at Thorp-le-Soken, Essex, in 1816, and his career furnishes a remarkable illustration of success attending perseverance and conscientious work. He obtained as a boy some employment at Guy's Hospital, and the opportunity presenting itself he fitted himself to go through the educational course necessary to gain medical qualifications. He graduated M.B. in 1841 and M.D. in 1846. From then his reputation has gone on continually increasing. For twenty years he was physician and lecturer at Guy's Hospital, and though he resigned his posts there in 1867, he resumed his association with his early home in 1871, when the position of consulting physician was offered to him. The degree of D.C.L. has been conferred upon him by Oxford, and he was elected F.R.S. in 1869. His baronetcy was won in 1872 on account of the assiduous services he rendered to the Prince of Wales during his illness. A little later he was appointed Physician-Extraordinary to the Queen. Sir Wm. Gull is President of the Clinical Society, and his reputation as a consulting physician is unsurpassed. His unfortunate action

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.



SIR G. BURROWS.



SIR W. FERGUSSON.



SIR W. W. GULL.



SIR W. JENNER.



SIR J. PAGET.



SIR H. THOMPSON.



SIR T. WATSON.

MEDICAL NOTABILITIES.

in the Balham case last year, in partially ignoring those whom he was called to consult with, occasioned a general outcry of indignation. Sir Wm. Gull apologised in a manly way, and this error will not detract from his reputation. "Sine Deo frustra" is Sir Wm. Gull's motto, and it might have been the text of a famous and eloquent introductory address delivered by him at Guy's Hospital a few years ago.

SIR WM. JENNER adds to his baronetcy the letters K.C.B., an honour which, it will be remembered, was conferred on him after the recovery of the Prince of Wales from a severe illness in 1872. Sir Wm. Jenner is a native of Chatham, where he was born in 1815. After completing his professional education at University College, he established himself in London as a general practitioner, his first public appointment being that of surgeon-accoucheur to the Royal Maternity Charity. He took his M.D. degree in 1844 from the University of London, and from that date confined himself to a consulting practice. Among the appointments he has held may be named those of Professor of Pathological Anatomy and Professor of the Principles and Practice of Medicine in University College, and Professor of Clinical Medicine in the hospital of that college, Physician to the Hospital for Sick Children, and Assistant Physician to the London Fever Hospital. He was appointed Physician-Extraordinary to the Queen in 1861, and a year after was made her Physician-in-Ordinary. In 1863 he was honoured with a similar office in the household of the Prince of Wales. He was made F.R.S. in 1864, and has also received the honorary degree of D.C.L. from the University of Oxford. Among his medical writings—which have been on various subjects, as, for example, fever, diphtheria, children's diseases, the heart, the lungs, the skin, &c.—may be especially mentioned a remarkable work "On the Identity and Non-identity of Typhus and Typhoid Fevers," in which he completely established the difference in the nature of these diseases. The motto chosen by Sir Wm. Jenner for his crest is the not very original one of "Fide et labore."

SIR JAMES PAGET has a very high European reputation as an operative surgeon. He is the son of a merchant, of Great Yarmouth, in which town he was born in 1814. He came to St. Bartholomew's Hospital as a student, and has been associated with that institution ever since, now occupying the position of consulting surgeon. He is F.R.S., D.C.L. (Oxford), and LL.D. (Cambridge). He is also Serjeant-Surgeon Extraordinary to the Queen, and Surgeon to the Prince of Wales. A baronetcy was conferred upon him in 1871. Sir James Paget is known in medical assemblies as one of the most effective orators in the profession. The words on his crest are "Lahor ipse voluptas."

SIR HENRY THOMPSON, F.R.C.S., M.B., is specially renowned for his works on lithotomy and similar subjects. He was knighted in 1867, in consideration of his services to Leopold I., King of the Belgians. It will be remembered that he has since come prominently before the public in connection with the last illness of Louis Napoleon, once Emperor of the French. Sir Henry Thompson was born at Framlingham, in Suffolk, in 1820, and was educated at University College. His first reputation was gained in 1852, when he took the Jacksonian Prize of the College of Surgeons for an essay "On the Pathology and Treatment of Stricture of the Urethra." We have heard that Sir Henry Thompson was originally in the drapery business, but we cannot remember our authority.

SIR THOMAS WATSON, Bart., is an ex-President of the College of Physicians, and a Physician-in-Ordinary to the Queen. His most honourable title to fame is his work "On the Principles and Practice of Physic." His M.D. degree was taken at Cambridge, and the same University conferred upon him the honorary LL.D., while Oxford gave him her D.C.L. Sir Thomas Watson is also F.R.S., and a consulting physician at King's College Hospital. He was born in 1792, at Thorpe, in Essex, and was created a baronet in 1866. For his crest he chose a striking motto from the Greek, *Παθήματα Μαθήματα*, which we suppose may be rendered "Trained by sufferings."

Pharmacalia.

Heralded by wind and cloud and tempest, the New Year has made its entry. The floods have risen, and hitherto the advent of another epoch in the world's history has not brought happiness in its train. As we write the rain is falling with unwonted violence, and the hail is ruining the hopes of spring. Let us try and remove our thoughts from the depressing influences of external nature, and see how we stand as pharmacists, and what are the prospects that open to our view.

First, then, we may be congratulated as a body on the admirable constitution of the Board of Examiners.

We believe that honest students can present themselves before no fairer tribunal. It contains within itself the elements of unbiased and competent appreciation of the merits of the candidates.

Where such deep interests are involved, radical changes are to be deprecated as much as a stereotyped monotony of officers. Great wisdom has been shown in avoiding both extremes, and while some have been proposed to fill that most honourable position of Examiner fresh from their own educational successes, enough have been retained upon the Board of assured ability and skill.

We indulge the hope that the alterations which now come in force will immediately produce good results. It was high time to stay one plague—the habit (boasted of in private) of appearing before the tribunal at the Square, with known defective preparation, to see what things were like. We have always credited this class of personage with those sensation letters which from time to time appear about catch questions and impartial dealing. Dating from this month of January, no part of the fee will be returned to an unsuccessful candidate, though he will have full opportunity by a commuted payment of presenting himself again within twelve months.

Another cardinal point, and one which will commend itself to the whole community, is that the last chance of the superficial has been withdrawn now that every candidate must satisfy the Board that he has been practically engaged for three years in the translation and dispensing of prescriptions. Grateful will be the thanks of the rising generation, when once immersed in the cares of business, for the supposed stringency of these provisions: then their daily experience will teach them the value of such regulations. They will find themselves engaged in duties which they are absolutely qualified to fulfil; they will find their path leading, not at sparse intervals but often, into larger and remunerative openings into which they can enter with advantage; and they will be left free to work out their career conscious of a mastery over the science of their art, and untrammelled by a feeling of unfitness for its business details. That such a view is taken of the matter by no few successful candidates we have daily further proof. The society may well be proud that this branch of their educational system has been crowned with encouraging results.

During the past year one hundred and one candidates have come up for the Major examination. The standard which must be attained before the Board is satisfied in its requirements is so high that the question may be raised once more whether some distinctive title should not be awarded. Under existing regulations a sense of honour and an innate love of excellence are the constraining motives to competitors. We respect these hundred and one men, including the thirty-nine whose reward is temporarily delayed, for having boldly determined to stand in the foremost ranks of pharmacy. We implore the thirty-nine who failed not to be discouraged; they are far more to be esteemed than the many hundred others to whom the passing of the Minor has been the supreme effort of ambition.

For both we wish that there were some more tangible advantage than the fact of having passed; some mark of official appreciation which the general public could understand; some outward and visible mode of recognition which the world, totally unacquainted with the minutiae of English pharmacy, could realise. As far as even educated society is concerned, the business qualification enjoyed by Minor and Major men stands upon an equal footing. Outside medical and pharmaceutical circles we have not known one instance where the difference between the two grades of pharmacists is understood.

* *

Medical opinion, if the *Lancet* is to be taken as an authority, has at last veered round to a common sense opinion upon one subject in which druggists are concerned.]

The eternal milk of sulphur annoyances are reprehended in a leading article. Their occurrence leads the chemist, who has no pet theory to support and no imaginary grievance to manufacture, to doubt the wisdom of certain analysts and judicial characters. The Runcorn case will be fresh in the recollection of the reader. Says the *Lancet*:—"Milk of sulphur does not mean pure sulphur, but a particular preparation, and we think the Runcorn magistrates were in error in deciding that a purchaser who went to a certain shop for milk of sulphur did not get what he asked for. If he wanted pure sulphur he asked for the wrong article, which was not the fault of the tradesman. The man who wants bread and asks for cake cannot reasonably abuse his baker."

A chemist of the olden time, who had a practical knowledge of his business, used to point out that trade had its unwritten but no less established formulae, and that to attempt to dogmatise and refine upon various popular notions was not an evidence of superior judgment. Where public custom had created a want for some particular remedy which experience had proved to be beneficial, he would not allow strained chemical theories to refuse the public wish, and he would have shared the condemnation of provincial pharmacy by adopting a similar line of conduct, though he himself thirty-five years ago was the first to point out the nature and composition of commercial milk of sulphur, the first to recommend a stricter mode of manufacture.

* *

Many things happen which are strange, but not unusual. Mr. Hall, of Faversham, was wont to tell that it was the habit of the men, if not closely watched, to wheel the gunpowder from one room to another whilst in the enjoyment of a quiet pipe. Proper little books relate the bad behaviour of the boy who thrusts a stick into a beehive. Our modern analysts practise both reactions on every possible occasion. Their journalism will become notorious, as their correspondence has long been exciting. We suspect some small men are ill-content with the reward of patience and ability that has attended the labours of distinguished operators, and seek by diatribe and sneer to gain notoriety where fame has been denied. Now, Cornelius B. Fox has written an excellent treatise on his special art, and J. Alfred Wanklyn has made admirable contributions to the literature of science. This cannot be tolerated by the *genus irritabile* of struggling lesser fish, wherefore the *Sanitary Record* bristles this month with two rejoinders to the onslaught of a correspondent who has chosen the soubriquet of "Gaudens in Prælio." The man of war meant *pugna*, not *prælium*, and dire has been his wrath because the professors just alluded to know how to examine water. Cornelius B. Fox, M.D., is equal to the emergency—he has read the contents of the letter of the complainant, and he is led to think that he is not very skilled, but rather captious and not very teachable. "If," says the Doctor, "he will send me his name, I will present him with a copy of the

third edition of my little book on 'Water Analysis' as soon as it appears, which will, I think, clear up all the difficulties under which he groans." The combatant is recommended to drop in for half an hour at "my laboratory in Chelmsford," where he may receive further ghostly comfort and advice, and learn, if open to conviction, that the Nessler or ammonia process to the analyst is much like the microscope to the physician. One thing is clear, that water, harmless as it looks, is made up of two explosive gases. Later experience has confirmed the truth of the original theory of Cavendish.

"Gaudens," not sufficiently demolished, is favoured with a second broadside from J. A. W.

The esteemed savant is fresh from his foreign water investigations, and he has also ventured to submit his experiments on carbon filtration to the world. "Gaudens" has the happy tact to intimate that the ammonia process is liable to confound the nitrates with nitrogenous organic matter; that in his hands the silicated carbon filter does not act, and that he is able to obtain a more accurate analysis by operating on a quarter instead of on half a litre. The irate analyst proceeds to show that nitrates yield ammonia by a process of reduction, whilst nitrogenous matter yields ammonia by oxidation. "Much nonsense has been written in opposition to the ammonia process; but 'Gaudens in Prælio,' who gets more accurate results the smaller the scale on which he operates, must be congratulated on having discovered a difficulty which had eluded all former objectors. When 'Gaudens in Prælio' is able to distinguish between nitrates and nitrogenous organic matter, and when his faculty of getting more accurate results the smaller the scale on which he works deserts him, then possibly he may be able to get those results with the silicated carbon filter which other experimentors have proved to be obtainable."

Time, the healer, may assuage the acrimony with which microscopical and analytical studies appear to be conducted. Pharmacy is less belligerent in its action, and more tolerant in its expressions; still none will doubt but that Dr. Fox and Professor Wanklyn had just cause for anger. We are reminded of a neat poem applicable to the situation:—

Ann Eliza, pray grow wiser;
Same advice to Anna Lizst;
Scorn private feud, and quarrel rude;
Write with pen and not with fist.

* *

The South London School of Pharmacy celebrated the ninth year of its existence by a dinner (which is now an annual observance), at the Horns, Kennington. The guests, who were nearly all old or actual students, numbered about one hundred and forty, and a pleasing sight it was to see them. The winds of heaven held an uncomfortable revel of their own round the high table, and the adoption of a rigid punctuality would enhance the general comfort. Dr. Muter was at his best while proposing success to the institution; his speech was short, forcible, and to the point, and it had the crowning merit of being in excellent good taste, an example which might be copied with advantage by some of those to whom is entrusted the responsibility of addressing an audience of young men.

He adverted in graceful terms to the existing Board of Examiners, and expressed his conviction that the individuals of whom it was composed were well up to their work in each department. He considered two points open to revision—the first was that books and memoranda were permitted at the Major examination: none of his pupils would condescend to the use of these literary crutches, and no one who knew practical analysis and had not crammed up his information would need their help. The second was that too frequent examinations almost necessitated insufficient preparation.

During the evening the students did not fail, whenever the smallest opportunity occurred, to show their appreciation of the labours

of Mr. Dodd, who superintends the department of practical pharmacy and materia medica. His classes have been unusually successful during the past term.

Dr. Albert J. Bernays has endeavoured to turn analysis to some benevolent and practical result. He thinks that while intemperance is a gigantic evil, many of the intemperate are more sinned against than sinning. He has noted the extreme variations disclosed in the percentage of alcohol contained in different wines and spirits. By alcohol he means proof spirit, such as consists of 49.24 per cent. by weight of alcohol, and 50.76 per cent. by weight of water.

In some spirits he has detected a variation ranging from 57 per cent. up to 70 per cent., while in children's cordials administered by impatient mothers, occasionally proof spirit existed as a trace, at other times in quantities of 32 to 39 per cent.

He suggests that spirits should be sold with some indication of their alcoholic contents: starting with 60 per cent. as X, every additional 10 per cent. would have a second X as its symbol, and thus the public would at least know the nature of their purchase. As a remedial measure we have more faith in Dr. Barnardo's chivalrous onslaught on dirt, poverty and ignorance, and in his splendid initiative in the acclimatisation of the continental café than in all other restrictions and expedients yet resorted to in our overgrown metropolis.

We must not close this brief chronicle without alluding to one who has always shown a kindly interest in things pharmaceutical. On one of the dreariest nights that ever inspired the heart with melancholy, Professor Archer discoursed at the Society of Arts on the Exhibition at Philadelphia. The rain poured in torrents and the wind blew in fearful gusts amongst the sequestered streets of the Adelphi. There was a fair audience, who sat and shivered, but which yet had the courage to remain.

We would draw attention to this excellent association, which has a famous collection of periodicals in its reading room, bearing on every class of subject relating to art, literature, and science.

Nowhere else can better lectures on applied chemistry be heard. In no establishment whatsoever can a larger amount of general information be obtained. The working classes are alive to these advantages, in proof of which it may be stated that on a very recent occasion, when three hundred tickets were issued for a technical course of lectures, the operatives took up the entire batch directly, and the same men, old and young, are engaged twice a week after business hours in attending a special art class.

Whilst the late Grace Calvert was delivering his Cantor Series there was not standing room either in the theatre or in the ante-room. Into the former we could never penetrate during that session, and we were fain to be content with listening at a respectful distance.

The building has an historical interest of its own well worthy of being related in the proper place, but we must not trench on details not immediately connected with our own vocation. Still the visitor will not fail to beguile his leisure in surveying the designs of Barry, the artist, which now adorn the walls. They are types of the art culture of that date—immense paintings filled with figures, highly allegorical but with scanty clothing, which satisfied the mind of Edmund Burke. The statesman thought Barry the genius of his day; sent him to Rome for his education, and befriended him throughout his whole career. Personally we are indebted to the late Thomas Morson for having introduced us to the membership of the Society of Arts, and having by that means opened up a new source of intel-

lectual pleasure. We wish in this New Year to persuade others to enter into the same enjoyment.

Enthusiasm, doubtless, is in itself a noble virtue, yet all virtues have their limits. There is the antiquarian who, with iconoclastic hammer, chips off a moulding from an ancient turret; and there is the entomologist who impales every butterfly within a radius of ten miles to furnish his collection. But in the army of delinquents the young botanist is conspicuous, and while there is still time we offer this premonition. Turning to the *Gardener's Chronicle*, we read the following mournful lines:—

Full many a flower is born to blush unseen,
And waste its sweetness on the desert air.
But where a British botanist has been,
In his collection you must seek it there.
Were it the sweetest plant that ever bloomed,
If it were rare, and he found out the spot,
He'd make it rarer—nay, it would be doomed:
His spud would soon eradicate the lot.

Down in a glen in North Wales, the exact locality we fear to give, there was a home for ferns which had long been the attraction of the neighbourhood. There the plants grew green, fairy-like, and luxuriant. Many were within easy reach, but they had been undisturbed for years. Quiet men and women, to whom their lovely fronds gave perpetual pleasure, thought they looked quite as well, and were as instructive in their natural state as when consigned *en masse* to the prison of a student's note-book, entombed in his bibulous paper, and ready to be epitaphed with hard Latin names more or less correct.

Whether the glen, by some fatal chance, got into the pages of a tourist's Guide, or whether the innate destructiveness which prevails in the juvenile scientific mind received an adventitious impulse—true it is that in one evening in the russet month of August every specimen of *Felices* had disappeared.

Now that was very wrong, Professor Somebody, and a warning voice is raised against similar autumn manoeuvres during this year of grace.

The Pharmaceutical Council.

JANUARY 3, 1877.

DISCUSSION ON CO-OPERATIVE STORES AND THE PHARMACY ACT.

ONLY fourteen members attended the first council meeting of the present year. They were:—Mr. J. Williams, president; Mr. W. D. Savage, vice-president; Messrs. Atkins, Betty, Cracknell, Greenish, Hampson, Hanbury, Hills, Owon, Robbins, Sandford, Shaw, and Stacey.

The chief business of the day was the discussion of a resolution aiming at an amendment of the Pharmacy Act, moved by Mr. Hampson. It was thus worded:—

In anticipation of an opportunity that may arise during the next session of Parliament of amending the Pharmacy Act of 1868, in any particular or particulars that the experience of its working may have proved necessary, it is desirable that a small committee shall give the subject its best consideration, and report in due course to the Law and Parliamentary Committee, suggesting the amendment or amendments it deems important.

In advocating this motion, Mr. Hampson said it was possible that during next session of Parliament an opportunity for further legislation might occur. The present Act had proved a failure in regard to public companies, who had ridden roughshod through its most important provisions. At any rate the council had not had sufficient confidence in it to test its strength. Mr. Hills here suggested that the discussion on this subject should be taken in committee, but

Mr. Hampson objected, and expressed his desire that all

members of the society should know the position of affairs. He was not casting any reflections on the council, but a duty and responsibility rested on it, it being the administrative body selected by the State to carry out the law. If the motion were carried it would be possible to utilise any opportunity which might arise in Parliament, but if such opportunity should not present itself, he thought the council ought itself to make an opportunity, and, after laying the grave statement of their position before the Government, ask its assistance in amending the law. The council should not act as if the law had given chemists and druggists privileges which would not bear the light of public discussion, and the course he proposed seemed to him only consistent with common courage and a determination to maintain the privileges given by the Act.

Mr. GREENISH seconded the motion.

Mr. ATKINS was disposed to be cautious before opening up the subject of pharmaceutical legislation. He was rather astonished at Mr. Hampson bringing forward this motion, as he thought another body to which Mr. Hampson had lent his influence had taken this subject in hand. Why did that other body exist if it were necessary to come to the council for what was required? Did he understand Mr. Hampson to charge the council with neglecting its duties?

Mr. HAMPSON intimated that there was the possibility of such an imputation if some action were not taken.

Mr. ATKINS seemed to accept this reply as indicating that Mr. Hampson did not intend to say anything so dreadful. He was sure the council had done its very best in the best interests of pharmacy, and so forth.

Mr. SANDFORD opposed the motion. The Act had not been a failure. The spirit of it, which Mr. Hampson said had not been carried out, was, first and foremost, that the public should be protected against the mistakes made by unqualified persons, and so far as public companies and co-operative stores were concerned it might be said that so long as they employed qualified and registered men the public safety was not endangered. He did not uphold co-operative stores, which he thought were doing an immense deal of mischief, but they should be opposed on broader grounds than this. The Pharmacy Act was passed to secure the public safety, and from that sprang certain advantages to chemists and druggists in Great Britain; but if it were attempted to put the interests of chemists and druggists before those of the public discredit would be thrown upon the Act, and if the council went to Parliament on that ground it would not receive much support. Co-operative stores had taken a great hold of public opinion, and even of the members of the House of Commons, and if an attempt were made to prevent public companies trading as chemists and druggists Parliament would say—"You are only thinking of your own private interests, and we will rather pass an Act to enable companies to carry on business." It appeared to him that the appointment of such a committee as was proposed was utterly needless.

Mr. SHAW supported the motion. He did not understand it as expressing an intention to go to Parliament for a special Act, but that if fresh legislation were attempted the council must be in a position to suggest such amendments as might seem desirable. It was stated some months ago that Lord Sandon intended to bring in a bill with regard to patent medicines, which was a matter of great importance to the whole trade. It seemed most anomalous that an Act of Parliament should be passed to secure the lives and health of the community by requiring all chemists and druggists to pass an examination before they could sell a pennyworth of certain poisonous articles, and yet any of these scheduled poisons might be sold with impunity if they bore a patent medicine stamp. Then there was the question of making additions to the schedule of poisons, and it was said that Sir William Frazer intended to bring in a measure on the subject. If he did it would be quite as well that the council should be prepared for it, and not have to decide in a hurry upon any points which might be raised. The resolution could do no harm, and might be of material service.

Mr. OWEN suggested that the Parliamentary Committee might be instructed to do what was required.

The PRESIDENT remarked that the Parliamentary Committee had power to appoint a sub-committee for the purpose, if necessary, but the council required no fresh Act of Parliament or increased powers to add to the schedule of poisons; it was simply a question of expediency.

Mr. OWEN, Mr. HILLS, and Mr. CRACKNELL agreed that it would be better to do nothing, but wait and see what might happen.

Mr. BETTY could not agree with those who thought there was nothing to be done but follow the old routine manner of conducting the society's business. He saw no reason why the society should fear the result of public discussion on the nature of their duties and their consequent position. Looking to the high examinations which chemists and druggists were now compelled to pass, it must be acknowledged that they really deserved a professional status, and he believed the public would view it in that light, and willingly accord them the same privileges which were given to other professional bodies. Unless there were some tangible grounds for going to Parliament it would be reckless to challenge public opinion, however confident that it would be pronounced in their favour; but the society had now had eight years' experience of the working of the Act, and that might be considered a fair average of the life of an unamended Act of Parliament, which they were fully conscious was to some extent incomplete in its original scope, and affected by subsequent legislation. If a committee were given time to make a report, every defect might be brought forward. In the opinion of many one very important point was the introduction of the words "pharmaceutical chemist" into the Irish Act, as a result of which Irish pharmacists might come to England and assume that title, and the society would thus lose the exclusive right to it. It was said that if the Act were meddled with no one could tell what might be the end of it, but he did not believe that the privileges of the trade, small as they were, hung by so fragile a thread that a mere breath would blow them away. If the council could not go to Parliament resting on the justice of their cause, they were in a false position altogether, and the sooner the Board of Examiners was abolished and chemists and druggists returned to the position of ordinary shopkeepers the better. As it was the general wish of the pharmaceutical body to amend the Pharmacy Act of 1868, the opinion of Parliament should be taken, and if they were beaten on some points they would know their position, and bear it like men. He should therefore support the motion of Mr. Hampson.

Mr. STACEY regretted that Mr. Hampson's motion seemed very much like a vote of censure on the council. He, however, saw no objection to a committee going through the Act to see what defects were in it.

Mr. HAMPSON, replying to Mr. Sandford, said he was astonished to hear that the Act was not in any way a failure, and that the spirit of it was not infringed. The Act was a failure in this respect, that it punished a man who opened a shop without a qualification, but permitted a public company to do the same without a qualification. To remedy this, together with other defects, he proposed the appointment of this committee, not from any disrespect to the Parliamentary Committee, but as an assistance to it.

At this point, in place of the original motion, Mr. Atkins drafted the following, which was seconded by Mr. OWEN and accepted by Mr. HAMPSON:—

That the Parliamentary Committee be requested to appoint a small sub-committee to consider the provisions of the Pharmacy Act, 1868, with a view of preparing or suggesting any alterations which it may deem expedient, and to report to the Law and Parliamentary Committee thereon.

Mr. SANDFORD, however, still objected, because it assumed that there were certain amendments required in the Act. He did not say that the Pharmacy Act was perfect or could not be amended, but he did not think it worth while to pass such a motion as an abstract principle. He therefore moved as an amendment:—

That the Parliamentary Committee be requested to appoint a sub-committee to watch any opportunities that may arise during the next session of Parliament of amending the Pharmacy Act, 1868, in any particular or particulars that the experience of its working may have proved necessary, or of supplying any deficiency therein through either proposed Acts, and to report in due course to the Parliamentary Committee.

The VICE-PRESIDENT seconded this amendment, and upon a division being taken, the following voted:—

For.—Cracknell, Hills, Sandford, Savage.

Against.—Atkins, Betty, Greenish, Hampson, Owen, Robbins, Shaw, Stacey.

The President was present, but did not vote.

Mr. Hanbury was not present at the division.

The motion proposed by Mr. Atkins was then put, and carried by the same majority.

The Chemists' and Druggists' Trade Association.

MEETING AT MANCHESTER.

A GENERAL MEETING of the chemists and druggists of Manchester and district was held in the Memorial Hall, Albert Square, Manchester, on Friday, December 15, at 8.30 P.M.

A deputation from the Chemists' and Druggists' Trade Association, consisting of Mr. Thomas Barclay, of Birmingham, the vice-president, and Mr. Haydon, the secretary, at the request of the Manchester Chemists' and Druggists' Association and School of Pharmacy, attended.

Mr. W. Scott Brown, the president of the local association, was unable, through indisposition, to attend the meeting. He explained that had this not been the case he would have taken the chair.

It was moved by Mr. E. G. HUGHES, and seconded by Mr. BARCLAY, that the chair be taken by Mr. Slugg.

Mr. SLUGG, on taking the chair, said he had thrown himself into this matter very readily as soon as he thoroughly understood its aims and purposes. He believed the organisation to be a sound one, and he might say, first of all, that it was not an organisation brought into competition or antagonism with the Pharmaceutical Society. He said that because he believed there had been a feeling on the part of some members of the council that the association would work in opposition to them. Now, he would assure them that there was nothing of the kind, but they came as co-workers and not as opponents. He was, however, very glad, when he went to Birmingham, to find some members of the Pharmaceutical Council, besides Mr. Richard Reynolds and other eminent pharmacists, who readily supported the association. They were organising a society for trade defence, and they might take it for granted that most assuredly they would not defend any dishonest traders, but protect honest men who might be placed inadvertently and through force of circumstances in a position of perplexity and trouble. When such a thing took place it was certainly better to fight the battle by means of a society *than individually*. He then called on the secretary of the association.

Mr. HAYDON explained the origin, aims and objects of the association.

The chairman then introduced the vice-president of the society, Mr. BARCLAY, of Birmingham, who said he was glad to meet such a number of his friends, and he thanked Mr. Slugg for his kind introduction. He was obliged to the officers and committee of the association for the opportunity they had offered of placing before the chemists of the Manchester district the advantage of the Chemists' Trade Association.

In the few remarks he would address to them he would speak of the necessity for such an association as the "Trade Association," and then he intended replying to some objections which had been made against it, and in conclusion offer some suggestions for promoting its success. The necessity for the Pharmacy Act of 1868 was variously viewed by chemists and druggists. There were not a few who thought that it was wrong policy to introduce legislation into the drug trade: they argued that the restrictions imposed upon chemists by the bill for registering the sale of poisons, and the responsibility involved by that Act, were not at all balanced by the advantages which were obtained under it. They argued that by the very examinations which were necessary to qualify the men to go into the trade they were unfitted for their work. He had heard it said that good assistants could not be obtained now. It was also said that apprentices are becoming more and more scarce. So it was argued that the Pharmacy Act had worked disadvantageously to chemists. He personally did not hold with those views. He believed that the Pharmacy Act would eventually be productive of a great amount of good to the chemists of the country, from the fact that assistants are so scarce. Fewer apprentices are coming into the trade, and notwithstanding the number who pass the examination, the register is year by year

becoming less. It is thus evident that by-and-by those who are in the trade will reap the benefit. But however men may disagree about the policy of the Act, one and all must agree that they should endeavour to get all the advantages they can under it. Chemists were suffering in many ways from illegal trading by men openly practising as chemists who are not on the register, by grocers and others selling scheduled poisons, and by Civil Service and co-operative traders. They could really have no conception of the amount of injury from the latter in the South of England.

These Civil Service stores were not only doing a great injury in this country, but were doing an injury abroad. He would read to them an extract from a letter he had received from India. The writer believed "that an association for advancing trade interests has long been urgently needed, and now more than ever, for the Civil Service and co-operative stores affected them even in Calcutta. It was not uncommon for those in high pay under Government to send home to the stores for their prescriptions, having them made up in a concentrated form, and he thought their efforts would be supported by every man in the business and by every assistant, for it was in their interest as much as chemists'." Now as to the question of juries. The House of Commons has decided that pharmaceutical chemists shall be exempt altogether from serving on juries, and they should have little difficulty in adding chemists if the matter was taken up by a strong association, such as they hoped to have. The sale of patent medicines was an important question, and they should be glad to have some suggestions as to the best means of dealing with it. They knew that in some parts of the country laudanum and opium even were put up as patent medicines. Mr. W. Scott Brown had suggested that the best plan was to do away with the stamp, for if the stamp was abandoned no one could sell anything containing scheduled poisons excepting registered chemists. Speaking of the Adulteration Act, he condemned strongly the appointment of gentlemen as analysts who are incompetent to carry out their duties, and who are placed in such a position that the reputation of those who have carried on their business legitimately and never defrauded any one is at the mercy of these analysts, who can thus drag honourable men into the mire. He had known instances where men had been placed in such positions, and he thought it was time that some association should take up this question, and he and others thought that as there was not in existence an association of that kind capable of defending chemists it was high time one should be formed. Magistrates were ignorant of technical matters, and, however anxious to do justice, they were misled by blind advisers, and so, the blind leading the blind, all fell together into the ditch. Mr. Haydon had spoken about the prosecution at Runcorn: he was sorry that their friends at Ashton were not members of the association, or they would have been defended by it. When the Runcorn cases came before the Law Committee, they decided to defend them, and immediately instructed their secretary to go to Runcorn and obtain the full facts, and they had decided to bring down Professor Redwood, of London, and Mr. Pemberton, a medical practitioner who held a very high position in Birmingham. Mr. Pemberton would tell the Runcorn magistrates that he had, for many years, prescribed *lac sulphuris*, and he meant it: he preferred it to the sulph. precip. He hoped they would be able to convince the Runcorn magistrates that they ought to acquit their members, and if they failed they were determined to go to Quarter Sessions and contest the legality of the judgment. Now, in Manchester they were happily situated in having professional gentlemen like Mr. Siebold. If all analysts were equal to their friend Mr. Siebold, whom he was glad to see present, they would not find it necessary to complain of the working of the Adulteration Act. They could also have trained lawyers, who could defend them in the police court, and so selfishly they might say "We need not join your association: we can defend ourselves;" but they would find it both difficult and costly, even in large towns like this, to obtain proper professional help. He would, however, say that supposing they were able to do this, surely for 5s. a year they would not deprive those in less favoured localities of the protection which would be afforded by joining with Manchester and other large towns. In country districts they had clerical magistrates, and analysts who were appointed by them. A chemist prosecuted in these places finds it very difficult to obtain the means of defence. It was to be expected, when they learned that by a subscription of 5s. a year they would obtain the services of gentlemen like Professor Redwood, they

would all throw themselves into the association. Under the Medical Act there might yet be a great amount of trouble. There were not a few medical men—but he thought they were a minority—who desired to prosecute chemists for prescribing simple remedies over the counter. Such prosecutions would never be sustained if brought before a proper tribunal and fairly defended. The public would demand that the chemist should be allowed to carry on his business as usual. He would next speak of the social advantages. The number of chemists' associations in the country were but few, but eventually the country would be divided into districts, which would be brought together to talk over trade matters, to choose their representatives in the general committee, &c.: local jealousies would thus be overcome, and much practical good result. There was a small class of chemists with a lucrative business, with plenty of money at their bankers', who said that they did not wish any society to defend them, for they were able to defend themselves. That was a most selfish policy. If, however, these gentlemen could so readily defend themselves in ordinary cases, there might arise some typical case which it would be necessary for the benefit of the whole trade should be defended to the utmost, and an appeal made to Queen's Bench. In such a position these gentlemen would probably be disposed to let the case slide, to the injury of the trade, whilst, if members of the association, they would have no hesitation in applying to it to have the case properly defended. He would offer a few remarks in reply to Mr. Frazer, who was a member of the Pharmaceutical Council and the president of the Glasgow Chemists' and Druggists' Association. He had lately given his presidential address at Glasgow, and alluded to the Trade Association. Mr. Fairlie, the secretary of the Glasgow Association, and a member of the executive of this association, had challenged Mr. Frazer to prove in debate that he was right in his objections to the formation of a trade association. On Wednesday last there was a meeting, and the subject for discussion was, "Is the Pharmaceutical Society capable of protecting the interests of the entire trade, or is the existence of a special association necessary?" and it was stated that the secretary would open the discussion, so that, as the president was to be answered by the secretary, he (Mr. Barclay) need not so fully criticise his address as he would otherwise have done. Mr. Frazer was a short time since summoned for selling Liebig's Liquid Extract of Meat, and the result was the exaction of a nominal fine of 50s. by the authorities. He was defended by professional gentlemen of Glasgow, and asks, in his address, would any society have done better. His reply was that if that society had been then in existence, and Mr. Frazer a member, he would have been informed it had been decided in the Bradford Police Court that Liebig's Liquid Extract of Meat was not an article which could be sold with impunity by chemists and druggists except under certain conditions. They would have circulated this information among the members of the association: the result would have been a clear saving of 45s., an argument which would, he thought, be patent to the understanding of any Scotchman. Mr. Frazer said—"If we restrict others from selling drugs and patents we must in all fairness begin by ourselves giving up the sale of the thousand and one articles other than drugs now sold by druggists all over the kingdom. This, I suspect, would be giving 'two rich Rolands for one poor Oliver.'" Mr. Frazer here forgets that we are not in the position of ordinary traders, and we do not propose to restrict the entire sale of drugs to chemists and druggists. Our object is to prevent illegal trading in poisons by Civil Service stores or by other vendors who illegally supply them. We say we have passed examinations, and submitted ourselves to the various restrictions of an Act of Parliament, and that these poisons should only be sold by chemists and druggists. Therefore Mr. Frazer does not put the matter fairly when he says that we must not interfere with these illegal traders if we continue to carry on our business as usual. All that we ask is simply that the law should be enforced. Mr. Frazer said that "these troubles of druggists only began when we got tied neck and heel by the Act of 1868." That was strange language for a gentleman to use who is a member of the council charged by Government to administer the Act: his place, one would think, should be outside, endeavouring to obtain its repeal. Then he goes on to defend the keeping of "open shops" by surgeons. Amongst the letters he (Mr. Barclay) had received at the time the association was commenced were many from Scotland, and one from a small town in the North of Scotland, in which the writer said he was the only chemist

and there were besides three "open shops," all kept by qualified medical men. The surgeons each kept a boy, who attended to the retail counter and dispensed the prescriptions. The result is that the chemist, although a major and honours man, is prevented from exercising his proper calling, and has to sell all sorts of things to obtain a living. He never sees a prescription, except it may be a "foreigner." He would say this state of things can never be right, for the medical men are not content with the dispensing, but they endeavour to do all the retailing of medicines as well. Mr. Frazer said further, "Indeed, in many villages and towns a surgeon pure or a druggist pure cannot be maintained, and I hold it is for the advantage of the public that the surgeon should keep open shop: the doctor can do the whole work of the druggist, but the druggist cannot do the whole work of the surgeon. But while I say so much on one side, I go as far as anyone here in condemning as unwarranted the wholesale rush in our business by medical men in towns such as our own, where there is ample scope for the display of their energies in their own proper field, and where there is certainly no lack of efficient druggists. They ought to aim at taking a higher social position than is compatible with their continuing to keep open shop." Mr. Frazer then goes on to recommend, for the present, outsiders to join the Pharmaceutical Society. He says, "It is, however, said that many of these chemists cannot afford to pay the 'guinea' a year to enable them to do so." He said "I fear this may be true of too many of our brethren." He (Mr. Barclay) would reply by saying that another member of the council, and by no means a warm supporter of the association, stated that the subscription fee of 5s. to the association was too high, and that unless it was made 2s. 6d. the trade would never be got to come in. Mr. Frazer again goes on to say, "Of course I am aware that the origin of the society is due to the existence of these very troubles," and he gives credit for singleness of eye to the promoters of the association. Mr. Barclay added, Although I criticise Mr. Frazer's address, yet I give him equal credit for a desire to do what is best to promote the best interests of the trade, and in making these criticisms he hoped Mr. Frazer would take it in that light. He (Mr. Frazer) also said the remedy was worse than the disease it was intended to alleviate, if not to cure:—"It appears to me to be not overstating the case to say it is equivalent to the swinging of a huge sledge-hammer by a brawny blacksmith to exterminate a fly that had settled on the brow of a fellow-workman. No doubt the fly would be exterminated, but what of the unhappy victim of disaffection?" Mr. Frazer, with the instinct of an apothecary, introduces the fly, the historic fly, into his address, whether with the usual effect he would ask his hearers to judge. Mr. Frazer speaks of the brawny blacksmith: he, for one, thought there had been in the past too much tinkering, and a brawny blacksmith with a sledge-hammer was very useful, especially if the workman be skilful. He challenged Mr. Frazer to deny that this association was managed by those who were careful and capable of conducting it properly. He need only mention the names of men like Reynolds, Hampson, Rimmington, Greenish, Savage, their friend Johnson here, and others, who were its supporters, to show that it demanded respect and confidence. Many chemists said they ought to get all that this association proposed to accomplish done by the Pharmaceutical Society. If that was possible, he would retire from the Trade Association to-morrow. The Pharmaceutical Society spent in 1875 a few hundred pounds, and at the end of the year he knew there was a feeling amongst some of the council that they had spent more than they could afford. How was it possible in such a state of things that they could undertake to put down the co-operative trading in poisons or protect chemists who are unfairly charged under the Adulteration Act, and other work of the kind. There were only two or three thousand men in the society, and it was unfair to expect three thousand men to defend the whole of the trade. It would be most unwise to take the Pharmaceutical Society into the law courts of the country. It would place the society, which was now an educational body, and had the charge of administering the Act, in a false position. It would never do to run the risk of "rebuff and failure" in these matters; it would do the society great injury. He held that the men who were opposed to the formation of this association were doing much to damage the position and influence of the Pharmaceutical Society, for they would necessitate its doing the work which only a trade society could properly discharge. In any proposed legislation, what help might not the Pharmaceutical Society derive from the co-opera-

tion of this association, for at present they could not speak with confidence, representing as they do a minority of the trade. If we represent a society numbering some 8,000 members, then we could go to Parliament, if necessary, as a powerful organisation, and do some good. What help would a society of this kind have been when the Adulteration Act was before the House of Commons! But they were not then in existence. The pharmaceutical chemist would, he believed, have secured a much better position than he now held, and the title of pharmaceutical chemist would never have been allowed to be taken, as it was, under the Irish Pharmacy Act. Referring to Mr. Sandford in eulogistic terms as the author of the Pharmacy Act, and alluding with pleasure to his manly avowal of his belief in the usefulness of this association—although he had been at the outset one of its strongest opponents—he said that they must have 8,000 members and an income of 2,000*l.* a year. Mr. Haydon told him there were 8,000 chemists and druggists in business in England. He hoped every chemist throughout the country would join the association and rally to the standard, and they would then have a real and a powerful organisation, and when any attempt at legislation was made an organisation like theirs would prevent any mischief being done. An organisation not powerful to sustain adulteration, not powerful in doing an illegal act, but powerful in securing the just rights of every chemist in Great Britain.

Mr. T. G. GIBBONS then moved the following resolution:—

That this meeting, having heard the aims and objects of the Chemists' and Druggists' Trade Association, as described by the vice-president and secretary, heartily approves of the same, and pledges itself to support the association by every means in its power.

He said the secretary and vice-president had so far exhausted the subject that there was little more for any one to say. There was one matter, however, that of finance, which must not be neglected—they could not get on without money. The only way they could succeed would be for every member to endeavour to bring in others, and as far as his means permitted subscribe to the funds. He had looked at this question from the commencement. He knew, if they went to a court of law or to Parliament, it meant money, and if they obtained 8,000 members at 5*s.* each it would only be 2,000*l.* per annum, and he did not think this was too much. If every one did his best he had no doubt they would succeed.

Mr. BOSTOCK, of Ashton-under-Lyne, seconded the resolution. He said he was glad to see so many Manchester chemists take an interest in the association. It was necessary that there should be some united action, and he thought this could not be better attained than by supporting the association. He had very great pleasure in seconding the resolution.

Mr. SIEBOLD said he was sorry the Ashton chemists did not offer a better defence in the recent milk of sulphur prosecutions in that town. He felt sure, had they done so, they would have obtained assistance which would have utterly defeated the objects of the prosecution. He would have been willing to have given any amount of time and to have appeared as a witness, and declare before the magistrates in a most emphatic manner, as a scientific man, that the prosecution were in the wrong. He should like to see more *esprit de corps* amongst members of the trade. He most certainly thought the association should be taken up by all, and he was prepared to give the cause his utmost support. He thought the recent prosecutions, taking place in their vicinity, should give a great impetus to the movement.

Mr. GIBSON said he went heart and soul into the objects of the association, and he should be very glad to become a member and do all he could to forward its aims. He could not, however, quite agree with all the remarks made by Mr. Barclay. They should remember that they lived in glass houses, and if chemists wished to restrict the sale of drugs to members of the trade they should, on their side, give up selling groceries, &c. He believed in free trade. Again, he thought the remark made by Mr. Frazer, at Glasgow, which Mr. Barclay disagreed with, to the effect that in many small villages the doctor could act as both doctor and chemist, whereas the chemist could not act as chemist and doctor, was a very sensible remark, and that Mr. Frazer was quite justified in making that remark.

The resolution was then carried unanimously.

The SECRETARY announced that already about 120 Manchester chemists had joined the association.

A vote of thanks to Mr. Slugg for presiding terminated the proceedings.

THE NECESSITY OF THE CHEMISTS' TRADE ASSOCIATION.

DISCUSSION AT GLASGOW.

AT the meeting of the Glasgow Chemists' and Druggists' Trade Association on the 13th ult., Mr. Fairlie read a paper on the question—Is the Pharmaceutical Society as at present constituted capable of protecting the interests of the entire trade, or is the existence of a special trade association necessary? It will be noticed that this paper was a direct reply to the criticisms of Mr. Frazer a month previously. Mr. Frazer was not present. Mr. Kinninmont, vice-president, was in the chair.

Mr. JAMES M. FAIRLIE, hon. sec., read the following paper:—

Mr. Chairman and Gentlemen—In introducing the subject that has been placed upon the programme for discussion this evening, I feel that I have undertaken a somewhat delicate, if not a difficult, task, as it may be necessary for me, at least indirectly, to refer to the objections our much esteemed president made against the necessity for a trade protection association in his inaugural address last month; and this I believe in ordinary circumstances is a breach of etiquette, but as the subject of the unwillingness or the inability of the Pharmaceutical Society's representatives at London to cope with all the little matters which crop up from time to time to worry and annoy members of our trade, and the apparent necessity there is for a special trade defence association, has been engaging the minds of pharmacists throughout the country for some months, and as this association has had no opportunity hitherto of considering the matter, there appears a reason why we should discuss the subject, and if possible come to some decision upon it. I place two points, therefore, before you. First, the Pharmaceutical Society is not able to protect the interests of the entire trade. This is denied by not a few of the leading members of the society. But there are such performances as going up in a balloon, and we are told by people who have made such an ascent that when they reach a certain altitude they see trees like men, and men like insects on the ground; with all due respect, however, to those parties, and no one can deny their disinterested labours and enthusiasm in trying to advance the common interests of the trade, I venture to suggest that they go up in a balloon when they make the assertion, "That the Pharmaceutical Society is able and ready to do all that is required in the interests of the whole trade." What I mean is that their position in business prevents them from understanding the exact position of those who happen to be in a smaller way of business than themselves. Their own statements prove this; they say, "Let every member of the trade join the Pharmaceutical Society, and they have the power to change the membership of the council in their own hands; in two years the whole of the present council could be turned out, and a new council substituted." There are two reasons, however, why a change of this kind could not produce such a complete alteration in the composition of the council as might be necessary or expedient, even though every chemist in the kingdom joined the society to-morrow. In the first place, the constitution of the council is, in one respect, definite; the majority must be pharmaceutical chemists; and second, it is only the few that can afford the time to attend to council business, although they had the qualification in every other respect. Now the number of pharmaceutical chemists are very few in comparison to the number of registered chemists and druggists; and such being the case it can hardly be possible to get a Pharmaceutical Council that could fairly be said to represent the bulk of the trade. Bear in mind I do not find fault with this arrangement in the composition of the council at present; I bring it forward only as an illustration of the absurdity of such a line of argument. But they say the council, as representing the society, is prepared to defend the interest of any chemist that is harassed unnecessarily. To prove that this is not the case, need we go back so far as 1871, when a Poisons Bill was before Parliament, and which, but for the existence of the Defence Associations which were then formed in three parts of the country, would in all probability have been in one form or another forced upon us as a trade, and with the consent, too, of the majority of the then Pharmaceutical Council? Need we refer to the numerous prosecutions under the Adulteration Acts, most of which I am certain that, had the

council the power as well as the will to bring their authority to bear upon the cases in question, the law would be so laid down that no druggist would have the shadow of an excuse to be entrapped by inspectors either of one class or another? If it is wrong to sell precipitated sulphur for milk of sulphur, or the effervescent saline for citrate of magnesia, and the council have the power, let a circular be issued to every member of the trade making a declaration to that effect; such would leave individual members of the trade in no doubt as to their duty in the matter. If, on the other hand, it is right and proper to sell these articles according to "use and wont," then let the society's law agent or his representative defend the cases, and let us not have in one case a conviction and in another a verdict of "not proven," with one section of the trade thinking it is all right and another that it is all wrong. Or used we refer to the action of the Medical Defence Association in its raid against prescribing druggists? Those of us who read the trade journals know that by a narrow majority the council decided to defend any unjust case of prosecution in this respect, but the bulk of the trade know nothing about it, and we know well that very many druggists do prescribe, and are probably ignorant of the fact that they are liable to prosecution; here, again, is a case where a circular might do a world of good. The question of expense comes in here, however, when a matter of this kind is suggested. It is possible that the council have no money to spend in this way; if not, then my argument holds good that they cannot protect the interests of the whole trade aright. If, however, they have the power, but withhold it on the ground of the expenditure, then, I say, it is short-sighted policy. One of the reasons, I believe, why so few become connected with the society is just because they know little or nothing about it; they seldom see a trade journal; they scarcely ever receive a circular from the society that governs them, and unless some national movement takes place—such as a fight over a Poisons Bill—they hardly remember such a body exists, and then they imagine it is not fulfilling its province, and when the agitation is over they go back to their old habits, and continue to nurse their old grumbles about the existence of a society that is not doing its duty. A body such as the Pharmaceutical Society must keep itself prominently before those who ought to be its constituents if it is to exercise that power and influence it ought; and I feel warranted in asserting that if but once a year a circular were issued to every person on the register, touching on some of those points I have indicated, accompanied by a leaflet explaining the object of the society, an annual addition would be made to the membership which would more than repay the outlay; and though the society did lose financially, it would gain in the respect with which it would be looked up to by all sections of the trade. There are other reasons than these why the society does not and cannot represent the entire trade; one of these I would instance is the publication of its journal. The great mass of the matter that is contained in its pages is far beyond the reach of the great majority of the trade to comprehend; it is, in fact, at least a dozen years in advance of the trade it represents. And while speaking of the journal I cannot but refer to the conduct of present and past councils in conducting their business with closed doors, serving up to its constituents, month after month, a "cooked" report, which in every case I am satisfied gives but a poor account of the amount of business they get through. If the society could adopt with propriety some such action as I have indicated, then I would acknowledge at once that there was no need of a trade association. But is it advisable that it should take upon itself the rôle of a trade protection society? If so, it must do much more even than I have here indicated; there must be a disposition to regulate the retail prices for medicines and hours of closing, together with a more active interest in provincial matters; the doors of the society itself must also be made a little wider by doing away with the entrance fee, if not reducing the annual subscription under certain circumstances—as well as a council drawn from a wider area. But is this advisable? I think not, and I would not be in favour of it if it were proposed. Unless, however, the opponents of the Trade Association are prepared to grant all this and a great deal more, they are tied down to the other alternative, and that is my second point, that the formation of a trade protection association has become absolutely necessary. But the opponents ask what good can it do? It can have no legal status! As a prosecuting agent I acknowledge it cannot; but as has been before argued, it can do work in the way of preparing evidence, defending and getting up cases, which the

Pharmaceutical Society is quite unable to do with its present machinery. The Trade Association requires no legal status to defend cases of unjust prosecution on the part of the Excise, the Medical Defence Association, or Adulteration Act inspectors. "But," say our opponents, "these cases are few and far between, and when they do arise there are always other members of the trade ready to help to overturn any unjust proceeding." Very true; but we have no guarantee that the cases will continue to be few and far between; already they are thickening, and is it business like to trust to haphazard in a matter of this kind? I think not. We will take a case in point; a dozen men are summoned for some assumed offence, and from some slight error on the part of a local law agent, who perhaps does not understand the case, a conviction is made, and as one case is taken as a type of the whole, each are fined; the fines and expenses of the whole, we shall say, amount to 30*l.*; the amount is subscribed among the local friends; but is there any guarantee that another batch may not be taken up the following week? None whatever. But looking at it from another standpoint, this case is perhaps a test case, the whole trade are interested in the decision one way or the other. If it is unfavourable they will know how to comply with the laws. In this way the whole trade benefits, but the few in one district have to pay the piper. Why should the money to defend such a case not come out of a common fund? And why should any withhold from aiding such a fund? Another objection presents itself for our consideration, namely, it is a species of trades' unionism. If trades' unions are conducted on right principles there is not much objection to them; it is only when ignorance and spleen cause men to go beyond the bounds of law and justice that such organisations become obnoxious. But there are trades' unions and trades' unions; we have them more or less in all grades of society. Medical men combine, lawyers combine, and why not pharmacists? It appears to me that want of unity is one of the hindrances to progress. We have an instance of what union has done in our own city. When I commenced business it was everyone trying to undersell his neighbour; now a common cause has bound us together, and we now get better prices, we understand each other better, and we feel that we do not live for ourselves alone, but that each depends upon one another. What the local association has done for the West of Scotland so the Trade Association will benefit the whole trade. The Pharmaceutical Society in all these years has only brought in a tithe of the trade; * the Trade Association, however, from its liberal constitution, the nominal fee, and the good work it is bound to accomplish as time progresses, will, I anticipate, break down barriers which at present exist, preventing good men from joining the Pharmaceutical Society, and induce them to come within its fold also. But another objection presents itself. The objects of the Trade Association are futile, as instanced by its failure to take up the co-operative store question, one of the grand aims it had when first instituted. My answer is, that expediency can only be a makeshift; it may be inexpedient to prosecute openly at present, but surely if a powerful organisation presented a case to the proper authorities, showing clearly there was hardship, I hardly think that any government would decline giving redress. The patent medicine question is another of a similar nature to that of the co-operative stores, and it is my opinion that very little would convince the Government to amend the law in this respect. In this matter at all events we have the medical profession at our backs; it is their desire that the sale of quack medicines should be greatly diminished; and the intelligent portion of the community are becoming alive to the fact that the great majority of them are not what they are represented to be. We have a strong case at all events in endeavouring to keep within ourselves the sale of all poisonous patents, and combined and determined effort on the part of the Pharmaceutical Society, the Trade Association and the local associations will have a wonderful effect in bringing about an approximation to the desired change.

And now the question arises, will the Trade Association affect our own special grievance—the surgeon-druggist? Had we been as united in 1869 as we are approaching to now, we might have amended the Pharmacy (Amendment) Act of 1869 more in

* In reporting this paper the editor of the *Pharmaceutical Journal* adds a foot-note here, remarking that as "a matter of fact, not of opinion, 33 per cent., or nearly one-third of all the chemists and druggists on the register are connected with the Pharmaceutical Society as members or associates." As Mr. Fairlie was obviously referring to chemists and druggists in business for themselves, this remark is not quite relevant. From that 33 per cent. most of the associates and a good many of the pharmaceutical chemists would have to be deducted.

our favour than it was done in that of the medical profession. We have still, however, a good case. In the first place, I believe I am correct when I say that it is only those who receive the diploma of L.F.P.S.G. that have the power granted them to practise pharmacy. The university, I understand, gives no such authority, and as the great bulk of the surgeon-druggists in and around Glasgow hold university degrees they are carrying on an illegal business in keeping open shop. Then many of the medical men have abused their privileges by giving their names to protect unqualified men. All this gives us a hold on the General Medical Council, which has the regulating of affairs under the Medical Acts, and one of their duties is to see that the interest of the pharmacist is not in any way interfered with. The Trade Association can approach that body, and, if within their province, the General Medical Council are bound to remedy what is at fault. We can never for a moment hope to shut up the surgeons' shops altogether. They must have the privilege of supplying their own patients with medicines if they desire to do so, which will cover the case of small country districts entirely; but in all cases where the surgeon engages in a general drug business, it seems but fair and reasonable that they should be made to place a qualified dispenser in charge in their absence. The chief objection to the Trade Association is probably that it may at some future time clash with the interests of the Pharmaceutical Society. This is a contingency as likely to occur without the existence of a special organisation as with it, as instanced in the formation of the defence associations five years ago. If there is anything that will engender such a possibility it is by leading members of the Pharmaceutical Society either holding aloof from the Trade Association, or engaging themselves in active hostility to it. Such conduct will not check the progress of the Trade Association; it is now an accomplished fact, and if those who fear collision will do their duty to the Pharmaceutical Society as well as to the trade generally, they will give the defence association their hearty support, and thus by their weight and influence help to guide its destinies, and at the same time aid in drafting an occasional contingent from the Trade "Light Foot" into the Pharmaceutical "Artillery." And now it only remains for me to refer to one other objection, viz., "It is a reactionary policy." But I have to ask, is reaction always wrong? I think not; at the same time I fail to see wherein the reaction lies in so far as the Trade Association is concerned. I look upon it from the opposite standpoint, and I say it is the very essence of true progress. Ask any merchant if he is not a member of some society for the protection of trade. I know I have subscribed a guinea a year to what is known as "The Guardian Society" for many years, and I look upon it as the best spent guinea I make in the whole year. It was only the other day I had an application for goods from a firm, and in the ordinary course of business I made inquiry respecting them through the Guardian Society, and got back a reply shortly advising, "No Sales." I acted on their advice, and a few days afterwards I was informed that this firm had turned out to be what is known as a "long firm," and that the parties had been apprehended with a great quantity of goods got from all quarters, for which they were unable, and had no intention, of paying. Had I written for references simply, I would have got them, and probably to some extent satisfactory, which might have induced me to send off the goods. I saved, however, a ten-pound note by it; and it is just such aid I expect from this Chemists' Trade Association. I quite believe that had it been in existence when the liquid extract of meat was first introduced we would all have been put on our guard respecting the nature of that substance before recent prosecutions took place. They have known of it in England for eighteen months previous, and it would have been the duty of the executive of the association to warn at least all its members of the danger, because, with the Trade Association, nothing is to be taken for granted; it will not be assumed that every member reads the trade journals and keeps himself posted up in small matters, but the executive will always be on the alert. What I consider the best feature in the Trade Association is, that while it will have its head-quarters in a central part of the country, it will also have attached to it a great number of local centres. It will have something more than a local secretary in each district. Already much good has been done in this way. In small towns, such as Chesterfield, the trade has been drawn together in such a way as it never was before. Men of one trade or profession come, by frequent contact, to see that they have a common interest and a common cause;

that jealousy and distrust of each other is a great hindrance to their own advancement, and that by united and harmonious action they can advance themselves and their fellow-tradesmen at the same time. And when we are thus united, and have managed to elude aside many, if not all, of those petty and vexatious annoyances, let us hope we may have time left us to look into the many attractive and wonders which lie within our reach in our mixtures and potions, and by diligent study and careful research may we then show to the world that we are a disinterested body, aiming at a greater knowledge of nature and nature's laws, that we may have them with us and not against us, for we believe there is not an atom but contains volumes of contemplation.

At the close of the reading of Mr. Fairlie's paper, which was heartily applauded, the Chairman invited the members to express their opinions individually.

Mr. JOHN W. PETTIGREW said that at first he had a doubt as to the propriety of the Trade Association, but after carefully reading and hearing the views on both sides, he had come to the conclusion that there was a need in the country for some such organisation as the Trade Association was likely to supply. He had always thought that the Pharmaceutical Council was composed of gentlemen whose knowledge of the requirements of the great majority of the trade was very meagre, and it was natural to suppose that such would be the case as long as the present system of election continued. The gentlemen of whom the council had been composed of late years were elected to office chiefly because they were known and respected by the members, and not because they held certain views on pharmaceutical politics, because there was no opportunity of judging what their opinions were until the reports of their speeches appeared in the *Journal*. Mr. Pettigrew thought that the members of the society ought to have some means of judging of the various candidates' fitness to hold the office of councillor; as it was at present, a list of names were sent down, and one had either to pitch the paper aside or vote at random. Regarding the Trade Association, he did not see why any jealousy should exist, as the two bodies ought to work to each other's hands and help each other.

Mr. J. A. CLARKE coincided with much of what Mr. Pettigrew had said. He was surprised at the statements some of the members of council had made when in Glasgow in September last, in regard to the position of the Glasgow druggists, and the competition they had to contend against with surgeons' shops. It showed that they could not understand the position of their less fortunate brethren unless they visited the different parts of the country and saw for themselves what work they ought to take in hand. He believed in the Trade Association because he could now carry on his business with some peace of mind. He took every precaution he could with respect to the purity and genuineness of his medicines, but, even with these precautions, he felt that he might be pounced upon for keeping some such article as rhubarb or scammony, over which he had little control. He had been once visited by an inspector, and for some days, until he learned that the result of the analysis was favourable, and although he was convinced in his own mind the article was all right, yet he felt anxious for fear of a prosecution and an unjust conviction. He now felt, however, that being a member of the Trade Association he had some one to appeal to for help, and if help was needed he would get it.

Mr. MURDOCH could only say "ditto" to the remarks of the other speakers. He could not see how any gentleman, having the interest of his profession at heart, could say a word against the Trade Association. It was a body which, with judicious management, could effect much good apart from the Pharmaceutical Society. There was work to be done which it was very evident the Pharmaceutical Council either could or would not do, and as it was necessary it should be done, he thought the Trade Association was the body to do it.

Mr. R. BROWN referred to the milk of sulphur cases, and said he thought the Pharmaceutical Society should have appealed against the adverse decisions that were given by some magistrates, and, with the decision of the Court of Queen's Bench before it, both the trade and the analysts would have known whether they were right or wrong, and an end would have been put to such fighting as has taken place over what seemed to him a mere quirk. If the Trade Association made this matter alone quite clear to the trade, it deserved the support and countenance of every pharmacist.

A few remarks were then made by Mr. McCann, who referred to the surgeons' open shops, but expressed his neutrality regarding the question under discussion; after which several other members spoke in favour of the Trade Association.

Mr. THOMAS DAVISON said that he had from the first thought highly of the Trade Association, and he further thought it would be a help rather than a drawback to the Pharmaceutical Society. He noticed that the leading members of the Trade Association were members of the Pharmaceutical Society, and he thought the Pharmaceutical Council ought to trust its own members that nothing would be done derogatory to the parent society. He had faith in the members of the Pharmaceutical Society having always sufficient influence and weight in the executive of the Trade Association to prevent any unnecessary collision or clashing of interests. He had much pleasure, therefore, in asking the Glasgow Association to adopt the following resolution, viz.:—"That this association cordially approves of the formation of the Chemists' and Druggists' Trade Association, and urges its members to give it their hearty support."

Mr. PERTIGREW seconded the resolution.

The CHAIRMAN said he believed they were all but unanimous, and he might be excused also expressing his opinion on the subject. He believed there was a great deal of sympathy in the trade generally. It was most difficult to get them aroused at all unless it was a question of warlike importance, such as the poisons agitation in 1871. He felt that the prosecutions under the Adulteration Act were the things they had most to fear, and where the Trade Association would stand them in good stead. They are under this Act practically prosecuted by scientific men, and it required that law agents and others who understood their position should be pitted against such men, so as to enable the magistrate—who generally in such cases had no mind of his own—to come to a proper conclusion. With regard to the Pharmacy Act, he thought there was a grave error in it, as no one in reading it would think for a moment that medical men had anything to do with the sale of drugs. A clause ought to have been added making it imperative that every separate drug-shop, whether possessed by a surgeon or a druggist, should have a qualified and responsible person in charge of it. He was not anxious for a prosecution of co-operative stores, as he believed that if they did succeed the same men would engage a registered person, put up his name, and carry on the trade in the same way as at present. He did not put much faith in counsels' opinions, as they differ so that you might not get two to give the same opinion. He thought, however, that the class who were supporting the co-operative store system at present were showing an example to those beneath them in station, which might ultimately come back upon themselves.

The motion was then put to the meeting, and carried unanimously.

CHEMISTS AND THE MEDICAL ACTS.

THE Leeds Chemists' Association had a discussion on this subject on the 13th ult. Mr. Yewdall (president of the association) read the following paper:—

About the year 1618 a charter was granted to a certain class of individuals calling themselves apothecaries, by virtue of which all such persons were formed into one body under the name of the Master, Wardens, and Society of the Art and Mystery of Apothecaries of the City of London.

This corporate body seems to have enjoyed the privileges of their charter and to have rested satisfied with it until the year 1815, when "An Act for the better regulation of the practice of apothecaries throughout England and Wales" was passed and became law. It is the provisions of this and subsequent medical Acts which I propose to bring before you to-night. It seems necessary that we should in the first place clearly understand the meaning of the term apothecary.

According to the 6th section of the Act previously referred to the duty of every person using or exercising the art and mystery of an apothecary is "to prepare with exactness and to dispense such medicines as may be directed for the sick by any physician;" and it is further enacted that if such a person (that is, the apothecary) here referred to shall refuse to make such medicines or to sell to any person any medicines or medicinal compounds, or negligently, falsely or unfaithfully mix or make any medicines, he shall be liable to certain penalties mentioned in

the section. It appears, therefore, that an apothecary was formerly a tradesman dependent upon the physician for his occupation, and having by study advanced his position nearer to the physician than the chemist and druggist, it was thought desirable to incorporate all such persons into a separate body. According to the provisions of the Act, it does not seem, however, that they gained any legal right to visit or prescribe for the sick, and although no person (unless in business prior to the Act) can carry on trade under the title of an apothecary unless he has passed the examinations therein referred to, yet it is evident that it was not intended that they should interfere in any way with those who preferred to carry on the business of chemists and druggists, as by the 28th section it is provided "that nothing in this Act shall extend or be construed to extend to prejudice or in any way to affect the trade or business of a chemist and druggist in the buying, preparing, compounding, dispensing, and vending drugs, medicines, or medicinal compounds, wholesale and retail, but all persons using or exercising the said trade or business, or who shall or may hereafter use or exercise the same, shall and may use, exercise and carry on the same trade or business in such manner, and as fully and amply to all intents and purposes as the same trade or business was exercised or carried on by chemists and druggists before the passing of the Act.

The character of the examinations of the Society of Apothecaries was evidently changed from time to time until the knowledge required fitted the apothecary to occupy a higher sphere and to undertake the treatment of some if not all the diseases to which we are liable. Yet they possessed no powers to recover any charges for attendance, and, therefore, in the year 1858, another Act was obtained, entitled "The Medical Act," in the preamble of which it is stated "it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners," to which end it is directed that a register of all persons holding certain qualifications, of which a list is given in a schedule appended, and in which Licentiates of the Apothecaries' Society are included, shall be made and continued from year to year.

The advantage gained by being upon this register is the right to practise medicine either with or without surgery, and to be able to demand and recover reasonable charges for professional aid, advice, and visits: also for the cost of any medicines and medical or surgical appliances rendered or supplied by the medical practitioner.

By the 32nd section of this Act "No person shall be entitled to recover for any medical or surgical advice, or attendance, or for the performance of any operation or for any medicine which he shall have both prescribed and supplied, unless he shall prove upon the trial that he is registered under this Act."

The word prescribe is here used for the first and only time in any of the medical acts, and whilst it clearly indicates that you may not recover for any medicine the formula for which you have devised, yet there is no clause throughout any of the Acts which makes it unlawful to construct formulae or treat any disease; and further, by the 53rd section it is enacted that "nothing in this Act contained shall extend or be construed to extend to prejudice or in any way affect the lawful occupation, trade or business of chemists and druggists."

The business of the retail chemist and druggist being that of a dealer in drugs and chemicals used as medicines or for the preparation of medicinal compounds, if a person desires to purchase a draught for indigestion, a cough mixture, or any other similar preparation, the order given indicates that they have formed an opinion of their ailment; and in such a case we are justified in supplying them with the remedy which we think is best for the purpose. Let it not be understood that I am in favour of the course adopted by some of visiting sick people in their own homes; although there is no law to prevent such a course, providing it is distinctly understood by the patient that he is under the treatment of a person who does not pretend to be a properly qualified person according to the Medical Act, yet it is assuming a position which we have no right to occupy, not having received the education necessary to fit us for such an important work.

It must be remembered also that any error of judgment, want of skill or improper treatment on the part of the unregistered practitioners, whereby a person loses his or her life, not only renders the person so practising liable to be charged with manslaughter, but also to a civil action for damages. He was indebted to Mr. F. Reynolds for an extract from the "Chemists' and Druggists' Diary," which he read, and in which the legal

aspect of the case had been treated by Messrs. R. G. Gleu & Toupson Chitty, Barristers-at-Law, who, whilst expressing slightly different views, were each of opinion that unless a person, chemist and druggist or any one else, assumed the title of a properly registered medical practitioner, he was not prevented from supplying any medicine.

An interesting discussion was carried on by Messrs. Freshfield Reynolds, E. Brown, W. Child, E. S. Payne and Thomas Iredale, in the course of which it was incidentally mentioned that the character of the trade carried on in the premises was indicated by the fascia, and was a sufficient guide to the public as to the pretensions of the tradesman conducting the business.

There was a unanimous expression of opinion that from the digest of the Acts bearing upon the question now laid before the meeting, there appeared to be no law to prevent anyone prescribing; and further, that in the event of any retail chemist and druggist being prosecuted and convicted it would be the bounden duty of the Council of the Pharmaceutical Society or the Chemists' and Druggists' Trade Association to carry the case to the highest Court of Appeal.

A vote of thanks to Mr. Yewdall for his paper was carried, on the motion of Mr. E. Brown, seconded by Mr. Iredale.

HULL CHEMISTS' ASSOCIATION.

THE annual supper of the members of the above association took place at the Cross Keys Hotel, on December 13. The president, Mr. C. B. Bell, occupied the chair, the honours of the vice-chair being sustained by Mr. J. F. Smith. There were also present the Mayor (Dr. King), Councillors Chapman and Smith, Mr. B. Stoakes (secretary), Mr. A. Smith, Mr. H. J. Parsons, Mr. G. Wokes, Mr. E. Allison, Mr. Oldham, Mr. Grindell, and other prominent members of the association. The secretary announced that he had received letters of apology from Dr. A. K. Rolit, Dr. Gibson, Mr. C. J. Niven, Mr. J. Baynes, and Mr. R. Micks, of the Inland Revenue. After the usual loyal toasts,

Mr. A. SMITH proposed the "Mayor and Corporation of Hull," to which the MAYOR replied.

Mr. E. ALLISON briefly proposed the "Town and Trade of Hull," and Councillor SMITH responded.

The MAYOR then proposed "Success to the Hull Chemists' Association," remarking that he could not help thinking that this association had done a great deal of good in the town, and that it had it in its power to do a great deal of good in the future. He understood that a much severer test had been established upon those who wished to enter the trade. He believed that these examinations had a beneficial effect upon the trade, and he thought this was a wise piece of legislation, and would tend to elevate and educate the minds of the people engaged in it, and this would be so much the better for the whole trade. He believed the chemists of the future would deserve and obtain a higher recognition than they had in past times.

The CHAIRMAN responded, asking the company to excuse his making a lengthy speech, as he was not in the best of health. He returned his hearty thanks to Dr. King for the kind and handsome manner in which that gentleman had proposed the toast, and he also thanked the members of the association for the honour they had conferred upon him in re-electing him to the dignity of president. This association, he believed, had made its mark not only in this country, but throughout the world, because no particular case in which they were interested had been published and circulated all over the world. He was alluding to the celebrated "pick-me-up" case. During the past year they had not had any more "pick-me-up" cases to deal with, and he hoped they would have no more. The Excise had looked after them, and they had not to go again before the magistrates. He was glad the Executive Committee had been allowed a little rest, and he was also glad to find that the number of members had not fallen off, but had increased. There had been a slight change in the Executive, their friend Mr. Oldham finding that he could not now spare the time necessary to devote to the office of secretary. This was a subject of regret, because that gentleman had been a very able and painstaking officer, but the present secretary, Mr. Stoakes, would, he felt sure, be an able substitute for Mr. Oldham, and would render every assistance in his power.

Councillor CHAPMAN briefly proposed "The Officers of the Association," to which toast Mr. J. F. Smith, Mr. B. Stoakes (secretary), and Mr. Oldham responded.

Mr. THYER proposed "The Medical Profession;" Dr. Sawden responded.

"The Pharmaceutical Society" was proposed by Mr. G. Wokes, and acknowledged by the chairman, as local secretary of that society.

The VICE-CHAIRMAN gave "The Visitors," who found a respondent in Mr. Lane, the representative of Messrs. Maw, Son & Thompson.

"The Press," "The Ladies," and other toasts followed, the proceedings being interspersed with harmony by Messrs. Ellis, Hollingsworth, and other gentlemen.

THE SUNDERLAND CHEMISTS AT DINNER.

THE annual dinner of the Sunderland Chemists' Association was held on December 13 at the Palatine Hotel. Alderman Thompson, president of the society, occupied the chair, supported by Lieut.-Colonel Gourley, M.P., Councillor Sidgwick, Dr. Yeld, medical officer of health for the borough, Mr. J. J. Nicholson, Mr. R. T. Nicholson, and Mr. Alfred Thompson; Mr. R. Robinson filled the vice-chair. Amongst the other gentlemen present were Messrs. J. Harrison, W. Sanderson, James Harrison, H. Turnbull, J. Mitchinson, J. Priestly, D. B. Sharp, J. Sayer, T. Chapman, J. Vipond, C. S. Lord, T. Thompson, T. H. Ward-roppe, and R. Brewis. An excellent repast was provided by Miss Godley, and it was well served.

Among the toasts and replies,

Col. GOURLEY, M.P., in responding for the Army, Navy, and Volunteers, urged the chemists to form in connection with their society a Pharmaceutical Company: they would prove not only a credit to themselves, but to the town in which they resided. To persons daily engaged as the gentlemen he saw around him were, the physical exercise involved in the military training would be extremely advantageous in preserving their health and maintaining their mental activity. As commanding officer, he would only be too glad to witness the addition of a pharmaceutical company to the corps. If the chemists took such a step, they would not only be doing themselves good, but they would have the satisfaction of knowing that they were doing something for their country.

The CHAIRMAN next proposed, in felicitous terms, "The Borough and County Members."

Col. GOURLEY, M.P., who was heartily received, responded in appropriate language. In the course of his speech he asked whether, as an association, the chemists of Sunderland were doing anything for the education of the members of the profession? They represented a branch of one of the most important professions and interests in the whole world—a profession which had its representatives even among the savage races, who, like civilised races in this respect, were obliged to have recourse to the science of medicine. Seeing Sunderland was so deeply dependent upon them, it was important that they should endeavour to raise the educational status of the members of the profession to the highest point. He was not aware whether they were doing anything in this direction, but he suggested that the society should provide a laboratory for the use of students, engage lecturers on professional subjects, and take other steps with the object he had mentioned. Such facilities ought to be accepted as extremely valuable aids to further knowledge by the rising intelligent young men in the profession in the town, who ought to occupy a high educational position amongst their fellow men. On the Tyne they found large chemical works, and even the small town of Seaham had got chemical works; but he looked in vain for such works at Sunderland. The attainment of the highest professional position was possible to the young men he saw around them, if they gave themselves to the study of their profession; and he hoped that at some future time they would be able to congratulate themselves on having chemical works established at Sunderland. Col. Gourley then proceeded to speak on the Eastern Question.

The CHAIRMAN said the promotion of education amongst the young members of the profession had not been lost sight of by the active members of the association. He had recently suggested that the corporation should provide in the proposed

library and museum buildings rooms in which lectures could be given to classes on various subjects, amongst others chemistry, materia medica, &c. If the corporation were to provide such a room, the chemists would be prepared to furnish it, and provide lectures, &c.

Mr. ALFRED THOMPSON proposed "Success to the Sunderland Chemists' Association." The number of chemists in the town, he said, were 47, while there were 42 or 43 in the association. They had every reason to congratulate themselves on the position of the association. He hoped to see the day when they would possess a laboratory, &c., but he would not have them be under obligation to the corporation for it. He coupled with the toast the name of Mr. J. J. Nicholson, who, he said, had very great interest in the association, and had done all he possibly could to promote its interests.

Mr. J. J. NICHOLSON responded. He said the report he had to give concerning the society was a most favourable one. Circumstances had occurred which had caused them to draw more closely together in unity, and there had been a considerable accession to their number. There was inaugurated at the beginning of the year a national society, having something like the same objects as were professed by the local society—namely, the protection of their trade interests. The chemists in Sunderland approved of the society, and they sent delegates to the meeting. With two or three exceptions they all joined it, and he believed the national society was going to be a very strong one. It had been objected that its objects were hostile to those of the Pharmaceutical Society, but it should be remembered that while they desired, through the medium of the Pharmaceutical Society, to attain to the dignity of a profession, it was important that at the same time they should not forget to protect themselves as a trade, which they could do through the new society. There was a separate work for each society to do, and he had every hope concerning them. Referring to Colonel Gourelly's remarks, Mr. Nicholson said they had aimed in the direction the hon. member had advised ever since the commencement of the association eight years ago. They had rented rooms and engaged teachers; but there had been inertia in their own body—they could not get the young men to avail themselves of the facilities afforded them. As the funds which were available at the beginning were, he believed, still available for such a purpose, he trusted they would now see a desire manifested to take advantage of the facilities suggested.

Mr. SHARP proposed "The Medical Profession," to which Dr. YELD responded. The speaker intimated that he had not been concerned in the getting of drugs from chemists in the town for analysis, because, from his experience of them, he knew they did not adulterate the articles they sold.

THE IRISH PHARMACEUTICAL SOCIETY.

The monthly meeting of the council of the above society was held at the College of Physicians, Kildare Street, on January 3, Sir D. J. Corrigan, Bart., president, in the chair. The following members were present: Dr. A. Smith, vice-president, Sir G. B. Owens, ex-Lord Mayor, Mr. William Allen, Dr. Collins, Mr. Goodwin, Mr. Hayes, Mr. Hodgson, Mr. J. T. Holmes, Mr. Payne (Belfast), Mr. Emerson Reynolds, and Professor Tichenborne.

The business transacted was mostly of routine character.

The examination for the qualification of pharmaceutical chemist took place on the same day: three candidates presented themselves, one failed. The following two were successful—Jeremiah Irwin and Samuel Malenoir Thompson.

A Preliminary examination was held on January 1. Eleven candidates presented themselves, of whom eight passed.

The evening meeting of the society, which was to have taken place on the same evening, was unavoidably postponed.

CHEMICAL SOCIETY.

Thursday, December 21, 1876.

PROFESSOR ANGEL, F.R.S., President, in the chair.

The minutes of the preceding meeting having been read, Professor W. N. Hartley made a communication entitled, "A Further Study of Fluid Cavities," in which he described the results of his examinations of a great number of topazes, and also of

some 400 rock sections, mostly granites and porphyries. In most cases the fluid contained in the cavities was merely water, but it was very remarkable that the cavities very often took the form of the crystals in which they were contained, and almost universally were arranged symmetrically with regard to the faces of the crystal. A paper by Dr. H. E. Armstrong, "On Thymoquinone;" one "On High Melting Points, with special reference to those of Metallic Salts, Part II.," by Dr. T. Carnelly; and another "On the Determination of Urea," by Mr. G. Turner, followed this, after which Dr. G. Bischof called attention to the rapid corrosion of the ordinary "compo" pipe employed by gasfitters when used to convey water, especially when exposed alternately to the action of air and water. The meeting was then adjourned until January 18.

THE MANUFACTURE OF COCOA.

IN a recent number of *Hand and Heart* we find some interesting details concerning the preparation of cocoa and chocolate as carried on in the works of Messrs. Cadbury Brothers, of Birmingham. From this article we select the most interesting paragraphs:—

It appears that the Spaniards were the first Europeans who tasted chocolate: it was part of their spoil in the conquest of Mexico. Bernardo de Castile, who accompanied Cortez, describing one of Montezuma's banquets, says: "They brought in among the dishes above fifty great jars made of good cacao, with its froth, and drank it," and similar jars were served to the guards and attendants "to the number of two thousand at least." Gage, an old traveller, who had visited the tropics, writing in 1630, remarks: "Our English and Hollanders make little use of it when they take a prize at sea, as not knowing the secret virtue and quality of it for the good of the stomach."

In the reign of Charles II. it was so much esteemed in England that Dr. Stubbs published a book, entitled "The Indian Nectar; or, a Discourse concerning Chocolate, &c.," giving a history of the article and many curious notions respecting its "secret virtue," and recommending his readers to buy it of one Mortimer, "an honest though poor man," who lived in East Smithfield and sold the best kind at 6s. 8d. the pound and commoner sorts for about half that price.

Linnaeus was so fond of chocolate that he called it *fond* for the gods in the distinguishing name he gave to the tree that produced it—*Theobroma Cacao*.

The tree is a native of tropical America, but is now largely cultivated in other parts of the world. It is an evergreen and grows to the height of from 14 to 18 feet. It bears flowers and fruit at all seasons of the year; these grow out of the trunk and thickest part of the boughs. The little yellow flowers are in clusters, and the fruit when ripe is of a beautiful orange colour. As the plant cannot bear the intense heat of a tropical sun, it is shaded by rows of loftier trees, as bananas, or more frequently the erythrina or corallina, called by the Spaniards *madre de cacao*, a tree with superb red blossoms.

The nuts are taken from the pod as soon as collected, and covered with a layer of sand. This causes a fermentation, which develops the aroma and takes off the natural bitterness of the nut. They are then spread out to dry in the drying or curing house. This house consists of a strongly built span roof fixed with wheels, running on iron rails laid along a stout framework, which supports a platform, underneath and upon which the cacao beans are dried.

Prior to 1831 the quantity of cocoa annually consumed in England had not reached half a million pounds, whereas it now amounts to over nine millions.

The Birmingham works have become widely extended. Fifteen years ago only about thirty hands were employed. The number now is from three to four hundred. During this time also so many improvements have been made in the arrangements and machinery that an equal number of hands now represents a double production as compared with the former time. This will give some idea of the largely increased consumption of cocoa. The greatest attention is paid in the factory to cleanliness; the young women employed are all clad in a kind of uniform of clean brown holland, covering the whole dress. From 9.5 to 9.15 every morning an interesting sight may be witnessed in the factory. The workpeople—men and women—assemble for a short and simple

religious service. Some of the *employés*, as a choir, conduct the singing; and snatches of the tunes often heard over the work during the day indicate the interest felt in the morning service.

The bags of cocoa, as they arrive from the docks, are stacked up in large piles. They come from different parts of the world—from Trinidad, Grenada, Caraccas, Carupano, Surinam, and even from Africa, and there are a few other choice and special varieties.

These cocoa nuts or beans are carefully sorted, and the unsound ones rejected; they are then placed in rotating cylinders and subjected to a gentle heat over coke fires, until the full aroma is properly developed. When cooled they are passed to another room, in which machines are arranged for breaking the now crisp, roasted nut into the irregular segments into which the kernel is naturally divided. The next process is to remove the outer husks by means of a powerful blast. The rich glossy kernel that remains is known in the market under the name of *Cocoa Nibs*. The husk or shell is sent off to Ireland, where it is used as a light, but by no means unpalatable table decoction, under the designation of "*miserables*."

The visitor is next conducted into a large room where series of stones are working, one over the other, much in the same way as in ordinary flour mills. Between these the nibs are passed, and, as the stones are heated, the nibs are reduced to a creamy fluid, which flows into pans placed to receive it. When quite cold this will turn out a perfectly firm, hard cake.

Up to this point we have the cocoa in its native condition, with the exception of the acids, &c., thrown off in roasting, and the shell removed by the fan. We now diverge into three distinct branches of manufacture; and as the *Cocoa Essence* is the product of the firm best known to the public, we shall give it precedence.

There is no sophistication in this article; it is the same cocoa we have seen running from the stones in a creamy fluid, with the excess of cocoa butter removed. The best cocoa contains about fifty per cent. of natural cocoa oil or butter, and this has been found to be far too large a proportion for ordinary digestions. Dr. Muter says: "The only objection which can and does exist to its use in a state of purity is the excessive proportion of fat, which renders it too rich for most digestions, and gives, unfortunately, a colourable excuse for its adulteration."

Messrs. Cadbury Brothers have therefore paid great attention to the production of a pure article free from this objection. The removal of two-thirds of the butter is accomplished by means of very powerful and complicated machinery, the result being an impalpable powder, soluble in boiling water and possessing the nutritious gluten and stimulating theobromine in an increased ratio; so that *Cocoa Essence* perhaps stands highest among dietetics as a flesh-former and nutritious beverage.

Still there is a demand for cocoa that thickens in the cup; and this comprises the second branch of manufacture to be examined. A given portion of the liquid cocoa is poured into a large steam-heated pan, and weighed with the sugar, arrow-root, &c., which of course differ in kind and quantity, according to the value of the chocolate powder required. Strong iron arms are then set in motion, which so completely levigate the mass that in a few moments it is reduced to a powder. These chocolate powders are sold under the names of *Homœopathic*, *Iceland Moss*, *Breakfast*, &c.

It is a relief, after witnessing these manufacturing processes, to mount into the Packing Department above; for, however interesting the results witnessed below, one grows tired of the incessant noise and clatter of the machinery. In the Packing Room all is light, cheerful, and orderly. We watch row after row of girls busily engaged. One is weighing, a second is packing and enveloping in cases of bright tinfoil, a third is fastening on the outside labels of the *Cocoa Essence* and other preparations now so well known all over the world.

The third branch of manufacture yet to be noticed is that of sweet Chocolate for eating and drinking; and here again we have numerous varieties. In the first place the pure cocoa is incorporated with white sugar in what is called a "*melangour*." This is a round stone basin in which the cocoa and sugar are placed, and which revolves at a great speed, while two heavy stationary rollers bruise the mass until it becomes of about the consistency of dough. From these *melangeurs* the mixed substance is at once passed through machines with three granite cylinders which crush it still finer, and in this state it is

ready for moulding into the various shapes and sizes for sale.

The best Chocolate is flavoured with vanilla, which is the fruit or seed-pod of one of those beautiful species of the family *Orchidaceæ* that flourish in tropical America. The stems climb to the height of twenty or thirty feet, twining round the trunks of trees, and throwing out a profusion of aerial roots, some of which eventually reach the ground. It seems specially adapted for flavoured Chocolate, and is used principally for that purpose.

Cocoa carefully selected and prepared in this way certainly forms the most delicious of all beverages or confections. The firm make a special article of this kind, packed in blue wrappers, which may fairly be compared to the famous Chocolate that Prescott describes as forming a part of Montezuma's repast: Chocolate "in golden goblets flavoured with vanilla, and so prepared as to be reduced to a froth of the consistency of honey, which gradually dissolved in the month."

We must not pass from this branch of our subject without a glance at the manufacture of the Chocolate *Crèmes*. It would take some one more practical than a philosopher to describe the minutiae of this delicious *bonne bouche*. When finished they are transferred to an endless lift which carries them down into a cellar to cool, and then again they are carried by the same means to the top of the building, where busy hands are placing them in boxes of all sizes.

There is also another extensive manufacture carried on by the firm. As everyone knows, the eye as well as the taste must be gratified in these luxurious times, and therefore success in the sale partly depends upon the beauty and finish of the packages. Many hundreds of thousands of beautiful picture boxes of all sizes and varied shapes are annually manufactured here. We follow our guide to the top of a large building where the process is going on, and find a number of girls at work. Some are cutting out and stamping the cardboard, and others fitting the boxes together on blocks, wrapping the edges with gold or gelatine paper, and fixing on the top those little gems of art which attract so much attention in our shop windows. Some of this work is carried on at the workpeople's homes; and we are told that it is a most interesting sight to find a large family busily engaged at it from morning till night.

Other details might be added and other departments noticed. For example, in the saw mills, in a building opposite, about twenty-five men and boys are employed in the making of wooden boxes exclusively for the firm. Here, too, everything has been done to economise labour by the use of the best kinds of saws, planing machines, &c., and this department, with its powerful engine, forms a complete establishment in itself. The tinman's shop also abounds in ingenious tools and devices; and we were surprised to find that foreigners are employed as being more skilful than the local workmen, although Birmingham is the seat of the tin trade.

IMPORTANT TO SODA WATER MAKERS.

SODA water makers who actually dissolve bicarbonate of soda in their product will be interested in some experiments reported by Mr. Wm. Inglis Clark at a recent meeting of the North British Branch of the Pharmaceutical Society at Edinburgh. On examining a block tin cistern which contained a solution of this salt, he found an incrustation on the sides and bottom, some of which proved on analysis to be pure carbonate of lime, with a trace of colouring matter.

The composition of the deposit being settled, the question as to how its presence could be accounted for remained. It was suggested that perhaps the crystals were present in the soda before solution. This being shown not to be the case, and a chemical examination indicating the absence of lime and the purity of the salts, the only possible cause seemed to be the Edinburgh water. From an analysis of it, the number of grains of carbonate of lime per gallon was 6.286, whilst of sulphate of lime there were only 1.0214 grs. present. The carbonate present would then account for the deposit. But how came it to deposit? The cistern was very cold, and Edinburgh water is not known to deposit carbonate of lime in the cold.

After some experiments, which he described, Mr. Clark concluded that the deposit was due entirely to the action of the alkaline carbonate present in the sodic bicarbonate. Bicarbonate, if quite free from carbonate, would not occasion the deposit.

But any carbonate present has a tendency to combine with the free carbonic acid in the water, which is the factor holding the lime salts in solution. Curiously, the potash salts did not exhibit this tendency, except to a very slight extent.

The deposit, Mr. CLARK said, has occurred, not only in the cistern, but also in the taps and pipes leading to the aerating machine, so much so that several times the pipes have been filled solid with this deposit, which in a week's time will weigh from 7 to 24 ozs., and, if the crystals referred to pass into the machine and bottles, the carbonic acid may be, and actually in cases on record has been, unable to effect solution of them. If the solution be made in small quantity, and immediately bottled, no doubt the deposit will not fall, the carbonate of lime being retained in solution. Those waters which contain little or no lime, such as distilled rain or Loch Katrine water, would be free from the objection, as also boiled water, but, where these are not to be had, some device must be resorted to. The best and simplest way of dealing with the matter is to allow the deposit to settle in some special vessel before using the water. In the absence of this the saturation of the bicarbonate with carbonic acid before use is an effectual preventive.

In answer to Mr. Mackay,

Mr. CLARK said the solution of bicarbonate of soda employed was equal to a little less than 30 grains to the pint.

Mr. MACKAY mentioned the case of a famous soda water maker, who had drawn very pure water from an artesian well, when suddenly and without warning the water smelt strongly of sulphuretted hydrogen, and the result was for a time, he believed, very damaging to the maker. No chemical explanation had as yet been offered for the occurrence, unless a discharge of gas from the interior of the earth had happened. He then said that it was interesting to learn that the sole cause of the deposit, as had been demonstrated by experiment, was the presence of the carbonate in the bicarbonate of soda, and that the passing of carbonic acid through the bicarbonate would effectually remove it, as had, he believed, been already demonstrated.

Mr. J. R. YOUNG asked if the deposit of 200 grains per gallon occurred with Howard's bicarbonate, and was answered in the affirmative.

Mr. CLARK showed by experiment the fact he had stated. A large glass jar of Edinburgh water was treated with solution of carbonate of soda, and turned almost milk-white with the deposit in about half an hour. Some pieces of soda water apparatus were also exhibited, which were incrustated with carbonate of lime.

CO-OPERATIVE STORES ON THEIR TRIAL.

THERE are certain drawbacks and inconveniences inevitable to the co-operative system. There is the trouble of writing out the order and reckoning up the total of the various articles, the trouble of going to the different departments for the different things, and there is no one at hand to guide you. You have to go to the cashier yourself instead of having your change brought to you; and it is often a very long time indeed before you can be attended to at all by either the counter assistants or the cashiers. And this brings us to another disagreeable, which need not and ought not to be, but as a matter of fact exists and increases. The demeanour of the young men, and especially of the boy cashiers, may be described almost without exception as being at the best barely civil, from which point it ranges from studied *sans gêne* and nonchalance to downright rudeness and insolence. In fact, their manners, and occasionally their appearance and dress, are so uncouth that it may be safely asserted not one of them would earn his salt in a shop frequented by the better classes. Of course purchasers may, if they choose, complain to the manager, and they are invited to do so; but it is difficult to find anything tangible in mere manner. A shopman need not throw your order at your head, but he can yawn in your face, or turn his back on you, or leave your questions unanswered as long as he dares, or attend to his toilette instead of your wants. It is quite possible, if you are in a hurry, for him to look at you so as to let you know that he sees it, and he thinks you foolish for being so, and still more if you suppose he will hasten himself on your account. All this is a matter of general complaint, and we have heard of no dissentient on this point. Now, if we reckon up the expenditure of time, of trouble, and of temper, it is quite evident that no sensible man or woman would ever enter a store if they were sure

of getting commodities as good and nearly as cheap at a shop. For these reasons numbers of purchasers, especially ladies, prefer the affiliated shops to the stores, nor is it surprising. But competition and good sense on the part of the shopkeepers have, to a very great extent, brought this to pass. It is not our object to advertise, therefore we give no names. But as regards wines, for instance, especially the light French and German wines, tobacco, cigars, and stationery, there are many firms who supply these articles of undeniable quality at the same, or very nearly the same prices, plus civility and carriage. The same thing may be said of tea, coffee, tinned meats, bottled fruits, pickles, and so on. As to provisions—bacon, cheese, butter, &c.—if they are a halfpenny or so cheaper by the pound, the difference disappears in the cost of carriage. In all patented articles, either for the toilette or otherwise, the stores still have an undeniable advantage over the shops; and this is also the case in respect of patent medicines, drugs, and making up prescriptions. The reduction of price in these things varies from one-half to one-third. But this is because the chemists and druggists are reluctant to relinquish their enormous profits, and have not yet opened their eyes to the fact that they are gradually driving their custom from their doors. If any enterprising druggist were to start a couple of shops with a guarantee that qualified assistants should dispense pure drugs at co-operative prices he would be certain of a well-merited success. On the whole, the tradesmen and shopkeepers may take good heart. They have only to persevere in what they have begun to win back their old customers and make new ones; whereas the shareholders of co-operative stores and their servants have only to continue their present line of conduct to bring to a vanishing point not only their popularity, but with it the support which they at first commanded.—*Pall Mall Gazette*.

POISONED ARROWS.

AN interesting report, published in the *Times*, has been made to the Admiralty by Staff Surgeon A. B. Messer, M.D., R.N., in relation to the occurrence of three fatal cases of tetanus on board Her Majesty's ship *Pearl*, after wounds by the arrows of South Sea Islanders. He observes that it has long been the popular belief that many savage races are in the habit of using poisonous arrows and darts both in warfare and in the chase, and marvellous stories are told as to the way in which the natives of the South Sea Islands poison their arrows, and their wonderful power of producing death, madness, and other strange effects, years after the receipt of a wound by them: it is an established fact that some of the substances used for this purpose in certain countries are of a very deadly nature, and it is not improbable that the natives, observing that certain plants produce speedy death when swallowed in considerable quantity, may attempt to render their arrows poisonous by smearing them with a concentrated preparation of those plants. It may be very doubtful whether they always succeed in doing so; but they may believe that such a result has been obtained, and, mistaking other effects which occasionally follow arrow wounds for those of the poison, they in their ignorance and superstition may become convinced of the deadly nature of their arrows, and consequently hold them in such fear and dread that the nervous system becomes liable to certain diseases on the slightest provocation. It must be borne in mind that ignorant and savage races consider disease and sickness to be due to the direct influence of evil spirits, to whose fierce and inexorable will they submissively bow, lying down and dying almost of their own accord. Many instances of this species of fatalism, or want of moral courage to resist disease, are to be found among all the coloured races, and present striking examples of the influence and power of the mind over the body. The Rev. Mr. Selwyn, of the Melanesian Mission, states that the natives of the North New Hebrides and Banks' Islands do not put so much faith in the poison as in the human bone at the end of the arrow, and the "mana," or power, of the man who shot, and the efficacy of his prayers and sacrifices. When a man is wounded his friends get the arrow and put it in a pot of water to keep it cool, which they think renders the wound less liable to inflame. Dr. Messer reports that attention was directed to the whole subject during the visits of Her Majesty's ship *Pearl* to the New Hebrides, Banks, and Santa Cruz Islands.

in the summer of 1875; and inquiries were made in various quarters with a view to obtain some useful information, but without any success, and without being able to secure any of the substances said to be used as poison on arrows. The crews of trading and "labour" ships are often wounded by arrows, but it is surprising how rarely any account is given of the result of these wounds; it is only when striking cases of tetanus happen to follow them that attention is arrested, and the popular mind at once attributes the fatal result to the poison on the arrows. Dr. Messer says that having, after somewhat careful inquiry into many of the well authenticated cases of tetanus following such wounds, come to the conclusion that the poison on the arrows had no direct effect in producing this disease, he endeavoured to persuade his shipmates of this, as they were running considerable risk of some being wounded during the investigation of these islands. He imagined that if it were possible to banish the belief and fear of the poison, the risk of tetanus following such wounds would be materially diminished; but he was grievously disappointed. After landing and making excursions into the interior of nearly every island of the New Hebrides group, collecting much interesting information relating to the natives and their homes, the party proceeded in the beginning of August to visit the Santa Cruz group, notorious for resistance to the advances of missionaries, traders, and white people of every class; and here at Carlisle Bay, Santa Cruz, on August 12, Commodore Goodenough and five men were wounded by arrows fired at them by the natives in a treacherous and unprovoked attack, and another officer accidentally received a slight scratch by coming in contact with the point of an arrow in the hand of one of the natives. Here, then, says Dr. Messer, was suddenly afforded an opportunity of observing the effect of these arrow wounds. Commodore Goodenough was an officer of the very highest intelligence, possessed of a most powerful and deeply cultured mind, a man who might be supposed to be free from any weakness or dread of uncertain danger; in the other officer a different and very highly nervous disposition was combined with a weakly and rather delicate body; in the five men every difference in age, disposition, and habit of life was represented. The wounds themselves were in every case very slight, and had they not been inflicted by arrows bearing such a bad reputation as those of Santa Cruz, and in such a climate, little notice would have been taken of them. But, considering the strength of the prevailing belief in the poison, and the fear of its consequences, it was deemed advisable to treat all as if the wounds were really poisoned, so as to allay the intense excitement which at once began to prevail on board, and to soothe the minds of the wounded by persuading them that the poison was destroyed. As the risk of tetanus following such wounds in special circumstances was much increased by their occurring in the tropics, the ship's course was immediately set for the colder climate of Sydney. No signs of immediate poisoning appeared. Beyond a very little constitutional disturbance in some, all went well till the fifth and sixth days, when, in the case of the Commodore and two of the men, tetanus set in, and proved fatal within 60 hours. What, it might be asked, could be clearer proof of the poisonous nature of the arrows? Here were three men out of seven wounded dying of tetanus almost at the same time, just as the men died who were wounded at Graciosa Bay and Nukapu, both in Bishop Patteson's party and on board the *Rosario*, and just like numbers of cases heard of among the South Sea Islands. It was the belief of many on board the *Pearl*, and of a large majority of the public at home and in the colonies, and, in fact, it was thought there could be no doubt about it, that these arrows are deadly poisonous, and that nearly all who are wounded by them die, sooner or later, of lock-jaw. But Dr. Messer asks us to examine the facts more closely.

He calls attention to the effect which the belief in the poison had upon the ship's company. There was a man on board who had been in the *Rosario* when two of his shipmates were wounded at Nukapu, one of whom died of tetanus. The man was a firm believer in the poison theory, and took great delight in telling marvellous stories about it, which tended considerably to increase the fear and excitement prevailing in the ship. Unfortunately, from the very first, although the Commodore apparently disbelieved in the danger of the poison, his mind never left the subject, but at once began to look forward to and prepare for a fatal result. In the case of the other officer wounded, unusual and irregular symptoms of tetanus set in very early, his mind becoming extremely excited, and, affected by the belief that he must die, he adopted strange and eccentric

methods to prevent his jaw becoming locked; he nearly induced real tetanus, and probably would have done so had his wound been anything beyond the merest scratch, hardly drawing blood. It was not until after a complete change from the ship to his home that he finally got clear of his painful sensations and belief. Of the two seamen who were attacked with tetanus, one was of an extremely nervous and timorous nature, and dreaded the poison from the very first; his wound was one of the more severe, but the other seaman, as severely wounded, showed no signs of dread. Among the other wounded men who escaped tetanus little or no sign of fear was observed. The most strange example of the mental shock was in an officer who received a slight prick on the finger in some unknown way, and who gradually, under the existing excitement, began to believe that in handling some of the arrows brought on board he had wounded himself. His fear and nervousness became so intense, and were associated with such strange creeping and twitching sensations near the wound, that he firmly believed he was affected by tetanus and should shortly die; and to such an extent did his morbid sensations lead him that he was actually considered insane by more than one medical man, and was ultimately invalidated from the effects of this nervous shock. In another instance a person who had sucked one of the wounds became so alarmed and nervous as to be unable to sleep, eat, or do anything but walk up and down in expectation of an early and painful death. Other slighter cases of nervous or hysterical tetanus appeared at this time, showing how powerful was the mental influence at work. Dr. Messer considers it of great importance to inquire whether it is not the fact that fear and mental emotion are strongly predisposing causes of tetanus, if not actual producers of it, when they are associated with a wound under certain conditions of climate and hygiene; for if it be found that wounds by these arrows rarely, if ever, produce poisoning, and that the tetanus sometimes following them is not owing to any poison, but is identical with the ordinary traumatic form of this disease, the removal of such a huge fear as the dread of the poison would take away one of the chief factors in inducing tetanus to follow these wounds.

The arrows used by the natives of these islands are long and heavy, and have at the end of the shaft a piece of hard wood, painted, and to this is firmly spliced a slender piece of human bone about eight inches long, terminating in a fine point, very brittle and sharp, and the point or tip easily breaks off on entering a body, leaving some fragments deeply embedded in the wound. The bone is generally smeared with some substance supposed to be poisonous. According to rumour, one process adopted for this purpose is that of soaking the arrows in the kidney fat or other parts of a dead, decomposing human body. But Dr. Messer observes that the introduction of putrefying animal matter into the body produces blood poisoning, but the effects attributed to these arrow wounds are tetanus or madness, and we do not hear of any one so wounded presenting any signs at all resembling those of blood poisoning, or even suffering more than the usual amount of constitutional disturbance proportionate to the severity of their wounds. Another process said to be used is smearing the arrows with some vegetable extract; but there is, he says, no known vegetable poison which will produce tetanus, or even symptoms resembling it, unless immediately after its introduction.

Dr. Messer states also that the recorded cases of wounds by these arrows show that it is very far from being the fact that death by tetanus always follows, and he is of opinion that there is but little evidence that tetanus occurs sufficiently often after them to make it at all probable that poison has any direct effect in its production. Professor Halford, of Melbourne University, some time since tried experiments on dogs and pigeons with the filth covering the tips of four different sets of "poisoned arrows," chiefly from the Solomon Islands; none of the animals died or were affected by it. Dr. Messer goes on to show that the occurrence of tetanus after punctured wounds is not extraordinary, but quite in accordance with well-known facts, and that terror and anxiety of mind have been observed to play often an essential part in inducing it. There is also the presence in the cases under consideration of an exceedingly hot, damp, relaxing climate, which, in the opinion of Hunter, can probably produce tetanus without any other cause, and when there is an immediate slight cause such diseases readily occur. Mr. Selwyn, already quoted, states that tetanus is common among the natives of the South Sea Islands, independent of wounds causing it, and he says that Mr. Nobbs, of Norfolk

Island, has had many cases of it, but not always fatal, among his Pitcairn Islanders. Dr. Messer goes on to show that the symptoms in the cases on board the *Pearl* were identical in almost every respect with those of ordinary traumatic tetanus, and differed most distinctly from tetanus produced by strychnia or any other known poison. He comes to the following conclusions:—That it is probable that the natives of many of these islands deliberately attempt to render some of their arrows poisonous, but that in the numerous cases in which men have been wounded by these arrows no recorded instances are known of poisonous effects following; that tetanus, or "locked jaw," has followed these wounds in comparatively few cases, and not more frequently than it does after similar wounds in like condition, where no question of poison has existed; that the "locked jaw" is not the result of a poison on the arrows, and the arrows are not in any way dangerous beyond the severity of their wounds and the conditions under which they are received; that tetanus, or locked jaw, being a very common result of all kinds of wounds among the black races and in hot climates, and these people being peculiarly susceptible to mental and superstitious influences, they have erroneously connected the occurrence of such a marked disease with the effects of different poisons; and that these ignorant races probably endeavour to produce this disease by smearing their arrows with various irritating substances, thereby increasing the superstitious dread of these weapons, and producing a nervous irritability in itself conducive to the occurrence of tetanus.

THE OPIUM MARKET.

THE following is extracted from the annual circular issued by Mr. Albert Mann, broker, under date December 30, 1876:—
At this time last year values for the drug stood at 22s. for soft shipping, and 17s. 6d. for druggists, with rather a better feeling among holders, whom the very moderate demand during November and most of December had caused to somewhat press for sales.

January, 1876.—The demand experienced during the end of the previous month quite fell off, transactions being on a very small scale, till the middle of the month, when some purchases were made for the States, at a slight concession; but the home trade and speculators still kept from buying, and the American orders being filled, the stagnation in druggists' qualities set in again, though needy holders would have met the market. Soft shipping was, however, better supported, some speculative purchases, based on the scarceness of choice, having taken place. No improvement in the demand took place till the end of February, when small purchases were made for America; but the quotations, though almost nominal, continued to tend downwards, notwithstanding a strong market at Smyrna, till in the middle of March some forced sales were made as low as 14s. 6d. Shortly afterwards there were rumours of damage to the growing crop, and a pretty general demand sprang up, the trade hardly holding any stock, and druggists' realised 15s. to 16s., which had previously been quite a nominal quotation. A loss at sea of a quantity of Persian likewise made that quality firmer, 14s. being asked for fine. During April the market was in a wretched state, hardly any transactions taking place, and the nominal quotations continually drooping: even soft shipping gave way through want of business, till 18s. and for druggists' 14s. was accepted. The large stock of Constantinople began to be pressed for sale, and considerable quantities were sold "without reserve." The scare did not extend to holders of fine Smyraa, however, nearly all being virtually off the market. The reported damage to the crop began to assume greater consistence, and towards the middle of May the market had recovered quite 1s. 6d., a further rise at that moment being prevented by the disturbed state of the Smyrna market through failures; but the month closed with an active demand at continually hardening prices, and the certainty of a small crop caused an active demand during all June. Prices rapidly advanced, and at the end of the month quotations stood for soft shipping, 20s., druggists' 18s., and Persian, 16s. July saw a continuation of the excitement, business being only limited by the small quantity holders brought forward day by day. There was a lull towards the end of the month, shipping orders having been filled, and the home trade fairly supplied; but a substantial advance had

been established, transactions taking place in soft shipping at 23s. and druggists' at 21s. Arrivals of new crop fine Smyrna came to hand on July 28 in a very green state. The article was very firm but quiet during August, the want of business in America reacting here; but the month closed with quotations standing for soft shipping, 24s., and druggists', 21s. 6d., the price in Smyrna being much above these figures. The quietness continued in September, and at Smyrna there was some reaction in the absence of American orders and the cessation of Dutch purchases, which adversely affected this market, though we had not followed their full rise. Some speculators being determined to clear out, 19s. was accepted for fine druggists', which figure still left them a profit. Soft shipping likewise receded to 23s. A much improved demand for all kinds set in with October, prices hardening gradually; and at the close of the month soft shipping was realising 24s., and druggists' 22s. The activity continued at the beginning of November, but though the market remained excessively firm the demand soon fell off. Soft shipping qualities—other than Malatia—became very scarce, and an advance to 25s. was established. At the end of the month the first arrival of new Persian came to hand: it consisted of the large quantity of 287 cases. For some time this variety had been neglected, the stock being very small, and of only second-rate quality. At the beginning of December there were a few sales of druggists' at rather easier prices, but no permanent improvement has been experienced, the home trade and American buyers remaining quite aloof. A few cases of the new Persian were placed at 16s. 6d. for good, 17s. 6d. to 18s. for fine, and retail sales of choice at 19s. Small orders for soft shipping have likewise been executed at 25s.

The market closes dull, but without pressure to force sales, the quotations standing—soft shipping, 25s.; Malatia, 23s. to 23s. 6d.; fine druggists'—Smyrna and Constantinople—21s. 6d. to 22s. Secunds, 19s. to 20s.; Persian, 16s. 6d. to 18s.

The present stock can be roughly divided as follows, viz.:—

| Shipping qualities of all kinds, many containing large rejections | Cases |
|---|-------|
| Druggists' qualities of all kinds | 324 |
| Persian qualities of all kinds | 500 |
| Egyptian and Indian qualities of all kinds | 366 |
| | 1,207 |

The deliveries for consumption this season have been under last year, the falling off having principally occurred in the shipment to the States and the Continent: the home trade has hardly been so active, but the deficiency is made up by the increased demand for South America and the West India Islands. Altogether, the actual business in the drug has been up to previous years, through the large amount of speculation that ensued from the low prices established in the spring, which dullness was brought about by the absence of American and continental orders: not that the consumption in those markets has at all decreased, but that they have supplied themselves in most cases direct from Turkey.

The crop of 1876 has turned out not only small in quantity, but in most cases very deficient in quality. The greater portion of the new stuff to hand as yet this season was, as last year, received from Constantinople, London being the principal outlet, the American and other direct buyers generally confining themselves to the Smyraa market.

Persian opium has not lost the hold that for the last few years it has had on the market, being still taken by all classes of buyers. Though the new crop does not reach England till November (the 25th this year), arrangements in Persia have to be made with the growers early in the spring. It was then expected the crop would be large, and the depression in the Turkey drug led shippers to expect very low rates. A great change, however, very soon took place. A reduction in the estimate of the out-turn, now put down at 1,800 cases, or barely an average crop, and the improvement in Smyrna, caused much excitement, and the bulk of the contracts were fixed at a high price. It is, therefore, not likely to be forced for sale, as there is a certain outlet in the north of China; in fact, it is understood that large shipments will be made forthwith to the East, which will ease the market here, for undoubtedly the arrivals of such large quantities as we have by one ship weighs on the trade more than if it were divided into many shipments. The opportunities of shipment of opium from Smyraa are so frequent to what they are from Persia that however large in the aggregate, they come in comparatively small parcels, and therefore hardly excite remark. There is a good selection of all qualities offering,

Some free from oil and coated with a
 sen much liked, being fairly soft; while
 containing oil to excess are this year

re-shipment. to be imported in small quantities for
 America, but none has been put on the
 open market this year—at the present value of other qualities
 it cannot compete with them for the home trade.

EGYPTIAN.—The importation has all but died out, barely half
 a dozen cases having come to hand: it would therefore appear
 it did not pay to cultivate.

It is calculated that the stock of Turkey, here and in the
 United States, is not more than 2,800 cases (exclusive of
 Persiau), and putting the total consumption till the crop of 1877
 is to hand at the reasonable figure of 400 cases per month, it
 will require the Persian to keep up stocks, thus speaking well
 for prices being maintained; but till the out-turn of the 1877
 crop is capable of being fairly estimated—say, in April or May
 —speculative operations, not at all based on the actual position
 of the article, will doubtless influence it. Business at the
 moment, both here and in New York, in the druggists' kind,
 which is the most important variety and considerably influences
 the others, is quite of a hand-to-mouth character. A more
 active condition of trade, however, would enable holders to
 establish an advance.

Scientific Notes from Foreign Sources.

THE SOLUBLE SALTS OF SALICYLIC ACID.

At the December meeting of the Berlin Society of Apothecaries (reported in the *Pharmaceutische Zeitung*) Dr. Schacht made some remarks respecting the composition of salicylate of soda and salicylate of zinc, the salts which, on account of their solubility, have been looked to as the most promising forms for the medical use of salicylic acid.

It has been often observed, Dr. Schacht said, that salicylate of soda is very liable to decomposition. This salt has hitherto been largely prepared by simply rubbing carbonate of soda with salicylic acid and moistening the product with alcohol. On examination the product, as might be expected, is found to contain a mixture of free acid and undecomposed soda. However, the Chemische Fabrik auf Actien, formerly E. Schering & Co., have lately introduced a salicylate of soda of special chemical purity. A specimen of this was exhibited at our November meeting, and I have since examined it. The salts of salicylic acid have been examined by Calours and Piria, but nowhere have I found details of soda and zinc salicylic. The acid salts of salicylic acid are soluble in water and crystalline; the neutral salts, however, are partly amorphous and less readily soluble. The specimens of sodium salicylic of the Fabrik auf Actien have the formula $2(C_6H_5NaO_2) + H_2O$, and contain 13.60 sodium. The latter was determined as chloride of sodium in the following manner. After carbonisation in a platinum crucible, the carbon was perfectly burned by repeated addition of nitrate of ammonia, and the white product was dissolved in a little water and exposed to a moderate heat after being coated with chloride of ammonia.

I. 0.5675 grammes gave 0.1930 NaCl, i.e., 0.075881 sodium, or 13.37 %

II. 0.5220 grammes gave 0.1770 NaCl, i.e., 0.06958 sodium, or 13.33 %

III. 0.7580 grammes gave 0.2600 NaCl, i.e., 0.1022 sodium, or 13.48 %

The salicylate of zinc as supplied by the same factory presents well-formed crystals, and has the formula $C_6H_5ZnO + H_2O$. The zinc was precipitated as carbon of zinc and weighed as oxide.

I. 0.7385 grammes gave 0.1615 ZnO, i.e., 0.1264 Zn, or 17.54 %

II. 0.8575 grammes gave at 125° C. 0.0870 hydrogen, therefore 10.14 %

III. 0.8800 grammes gave 0.1870 ZnO, i.e., 0.1488 Zn, or 16.83 %

IV. 0.8375 grammes gave 0.1840 ZnO, i.e., 0.14518 Zn, or 16.92 %

V. 0.8290 grammes gave at 100° C. 0.0810 hydrogen, or 9.78 %

The formula $C_6H_5ZnO + H_2O$ requires 17.34 per cent. zinc and 9.07 water.

The salicylate of zinc shows under the microscope well-formed needle crystals, while the soda salts present crystalline scales.

SALICYLIC ACID AND DIPHTHERITIS.*

Dr. WAGNER most earnestly recommends salicylic acid as a remedy in diphtheritis. The author's way of using it is as follows:—To children too young to gargle, he gives a powder of 0.15 to 0.3 gramme every two hours in water or wine; for older children he prescribes, in addition, a gargle containing 1.5 salicylic acid, 15 spirit of wine, and 150 of distilled water, to be used hourly. If crystals separate, it is only necessary to warm the gargle slightly. Fifteen very difficult cases have been treated in this way by the author without a single failure. Besides this, in all fifteen cases the course of the complaint was shortened in a surprising manner—a result not obtainable by any other means.

TO DISTINGUISH BETWEEN MADDER AND ARTIFICIAL ALIZARIN AS DYES FOR COTTON.†

The fabric is first saturated with a solution of permanganate of potash, and then dipped in an acid. By this treatment madder red become yellowish; artificial alizarin, on the other hand, gives a rose red colour. Or the difference may be shown more decisively if the article is dipped first in bichromate of potash and then in a saltpetre solution: in this case the madder dye is completely discharged, whilst the artificial alizarin remains rose-red as before. If boiled for one minute in soda lye of 18° B., and then washed with hydrochloric acid of 20° B., the madder red becomes a dirty orange colour, the alizarin a beautiful bright yellow. To make the permanganate solution, 1 gramme of the salt is dissolved in 200 c.c. of water; for the further treatment, hydrochloric acid of 3° B. is used. After another dip in the first solution, and washing, it is finally treated with a solution of oxalic acid of 1° B. The bichromate of potash solution is 10 grammes of salt in 200 c.c. of water, and the solution of nitre must have a density of 50° B.

ACTION OF RAIN WATER ON LEAD PIPES.‡

Dr. SCHWEITZER, of the University of Missouri, tested the water used in the laboratory of his university, which was rain water collected in a tank and supplied to the working tables through leaden pipes with brass stop-cocks.

The following quantities of metals were found in one U.S. gallon of 231 cubic inches of the filtered water that had stood in the pipes for one month:—

| | Grains |
|--------------------------|--------|
| Metallic zinc | 1.079 |
| Metallic iron | 0.537 |
| Metallic lead | 2.503 |
| Metallic copper | 0.082 |
| Metallic arsenic | 0.049 |
| Total | 4.250 |

Arsenic, copper, and probably iron are derived from the lead pipe, manufactured from an inferior quality of lead, and zinc from the lining of the tank. In supplying private houses or institutions with water through a system of pipes, tin-lined lead pipes only should be used.

TESTING WINE FOR FUCHSINE.§

By M. FORDOS.

The following test process is recommended as simpler, more expeditious, and giving more marked results than that hitherto used.

Ten c.c. of the wine are put in a test tube with 10 drops or 1 c.c. of pure ammonia, and briskly shaken for some seconds. Five to ten c.c. of chloroform are then added, and mixed with the wine by putting the finger over the end of the tube and reversing it several times, care being taken not to shake it, so that the chloroform may separate readily afterwards. The

* *Zeits. des österr. Apoth.-Ver.*, October 1, 1876, p. 441.

† *Zeits. des österr. Apoth.-Ver.*, October 10, 1876, p. 460, from *Les Mondes*, xxxviii., No. 13.

‡ *American Chemist*.

§ *Repert. de Pharm.*

contents of the tube are then poured into a funnel provided with a stopcock, and as soon as the chloroform has sunk to the bottom, it is run off into a porcelain capsule, which is placed in a sand bath. A slip of white silken stuff is laid in the chloroform, and heat is applied. The chloroform volatilises, and, if fuchsin is present, leaves a rose stain on the silk. Towards the conclusion of the operation a little water should be added, and the heat continued. The colour is thus fixed on the silk, the shade being more intense as the proportion of fuchsin is larger. If the wine be pure, there is no rose colouration. By concentrating the wine first, and using a very small piece of silk, the presence of very minute, almost infinitesimal, quantities of fuchsin may thus be detected.

The process would probably serve as well as an approximate quantitative test. For this purpose a colour-scale should be composed of pieces of white silk, of equal size, taken off the same piece, and treated with wine of known composition, mixed with different proportions of fuchsin.

MINERAL OILS.—THEIR PURIFICATION AND USE IN PHARMACY.*

By M. MASSON, PHARMACIEN, LYONS.

THE author finds that mineral oils may be deodorised so as to fit them for pharmaceutical and other uses. The process is cheap and simple, and consists in treating them with,

| | Parts |
|-------------------------------------|-------|
| Alcohol (95°) | 600 |
| Sulphuric acid | 60 |
| Nitric acid | 60 |
| per 100,000 parts of petroleum oil. | |

The acids are first introduced separately, by means of a funnel with a long tube reaching nearly to the bottom of the vessel. The spirit is then poured on the surface of the oil, and precipitates slowly, uniting with the acids. Heat and slight effervescence are thus set up, producing the distillation of a small quantity of nitrate of ethyl or nitric ether. The new products have a very agreeable smell, and the substances so treated take a yellowish tinge, and have also an agreeable odour. The operation takes about an hour, after which the oil should be well agitated and washed with water, and left to stand for eight or ten hours. The surface liquor, which is deodorised petroleum, is then decanted, leaving behind a mixture of acids, water and alcohol. This may be used in purifying what are known as fatty oils. It should be well stirred therein, and the mixture left for twelve hours, and afterwards twice washed with milk of lime. The oil is thus deprived of its acids and other foreign matters, and loses much of its rank smell. It will be found well adapted for lubricating purposes.

In pharmacy, the author has found petroleum purified and deodorised as above an excellent substitute for rectified spirit. Various tinctures for external use, camphorated, etherised, and chloroform solutions so prepared answer as well as with an alcoholic base.

The first trials were made in veterinary practice. Mixtures of deodorised petroleum with fats or glycerine are likely to prove of much value in the treatment of skin diseases, &c. A mixture of petroleum and glycerine has a very pleasant odour, and is said to be as efficacious as the preparations of sodic or potassic sulphide now in use.

In veterinary pharmacy, more especially, it is submitted, a very important saving would thus be achieved. Rectified spirit of 95° now costs in France 330 francs per 100 litres. An equal quantity of deodorised petroleum would cost only 80 francs. [In England the difference would be even more striking.]

"TAKOUT," OR TAMARISK GALLS.

By PROFESSOR VOGL, IMPERIAL UNIVERSITY, VIENNA.†

AMONGST other North African drugs which were brought under the notice of the Pharmacological Institute of the Imperial and Royal University, through the medium of the late Vienna Exhibition, was a large sample of Tamarisk galls, from Morocco, entered under the name of "Takout." As these galls have lately attracted some attention on account of the

large proportion of tannin they contain, a few remarks respecting them may not be out of place.

Tamarisk galls are imported, not only from Morocco, but from Algeria, parts of Central Asia, and India. Gall-nuts are produced on most, if not upon all, species of Tamarisk, but those known in commerce, it would seem, are found upon one sort only, the *Tamarix articulata* of Vahl, or *Tamarix Orientalis* of Forskold. The Morocco and Algerian Takout have this origin. Leared, in his memoirs on the drugs of Morocco, assigns them to *T. articulata*, Vahl. They are evidently the same as those described under the head of gall-nuts, in Prosper Albin's discourse on the plants of Egypt. Probably, too, they are identical with the gall-nuts employed in Persia for industrial and pharmaceutical purposes. Hanbury and Flückiger state that the galls of *T. Orientalis* are used in India as a substitute for oak-galls. These appear to be the same as those described by J. Weisner ("Rohstoffe des Pflanzenreiches," p. 809), as known in India under the name of "Padwus," and a product of *T. furas*. A sample in our collection, labelled "Bokhara Galls," the produce of *T. furas*, agrees in all respects with the Morocco "Takout." The latter are also most likely the same as the "Bucharest Galls" described by Palm, which, under the name of "Busgunsh," are largely used for dyeing in Central Asia, more especially in the Khanates of Khokand, Khiva, and Bokhara.

The Morocco galls vary in size from a peppercorn to a hazel nut, or even larger, and present an infinite diversity of shapes, the greater number being egg or kidney shaped, lobed, oblong or round, and of irregular contours. Their surfaces are rough and warty, of a dull earthen grey, with a shade of yellowish brown or purplish or reddish brown, on one side. Sometimes they are yellowish brown on one side and brownish red on the other. They are hard; some of them, the large ones, brittle; friable between the fingers with a slight pressure; the smaller ones are imperforate, the larger have one circular perforation, by which the insect has made its escape in the perfect state. Their interior is of spongy texture, of a yellowish or greenish brown colour, containing a cavity of irregular shape. As in the Chinese and Japanese galls, traces of aphides and mould often occur on them.

The substance of Tamarisk galls is made up of an epidermis of close cellular texture, enclosing a parenchyma of small, fine-pointed cells, arranged polyhedrically or axially, and interlaced with strands of bark-like fibre, and a few pigimentary cells.

The cells of the epidermis contain a dry pigment, which is also found irregularly distributed in some of the cells of the parenchyma, together with a few rosettes of oxalate of lime. This pigment dissolves readily in water. With soda lye it gives a yellow dye, the solution forming a purplish glaze upon the surface by contact with the air. With salts of iron it gives an indigo blue. Dissolved in soda lye and treated with acetic acid, with the addition of a solution of chloriodide of zinc, it produces a deep blue colour. The tannic principle in these galls closely resembles that in oak bark and valonia, whilst the same principle in Pistachio galls resembles rather that of oak galls and sumach.

Tamarisk galls exhibit no traces of fecula, and are apparently devoid of resiniferous and lactiferous ducts. The absence of these ducts distinguishes them from *Rhus* galls (Chinese and Japanese galls), and from Pistachio galls, i.e., the leaf-galls of *Pistachio terebinthus* and *P. lentiscus*, which are largely collected in the East, and used for the same purposes as Tamarisk galls.

The latter are also distinguishable by their smooth surfaces, larger size, and the occurrence of a resinous balsam in their substance.

To the Pistachio class probably belong certain "Bokhara Galls," produced on *Pistachio vera*. At least, we have a sample before us formed on this species. These galls are round, ovoid, or oblate; their surfaces smooth, without corrugations, of a light yellowish red, sometimes shining, with a very thin, coriaceous, translucent, violet-brown cuticle, and a single perforation, the structure resembling that of the galls on *P. terebinthus* and *P. lentiscus*. The proportion of tannin in them is 32 per cent. In Tamarisk (Bucharest) galls, according to Palm, it is 43 per cent.

DR. DRYSDALE has withdrawn from the editorship of the *Quarterly Journal of Homœopathy* in order to have more time for scientific pursuits. The publication is reduced in size and in price, now selling at 3s. instead of 5s.

* Pharmacologiste.

† From the *Wiener Gerber*.

MEDICAL GLEANINGS.

A French physician, Dr. Dubert, of Paris, who we fear is more practical than pious, remarks on the difficulty of instilling into the minds of his countrywomen correct ideas on the nursing of infants, and he therefore suggests in all seriousness that a short appendix, containing elementary precepts on feeding, and rearing infants, should be printed at the end of prayer-books, missals, and religious books generally. One step farther, and the Holy Catholic Church will take advertisements for its many publications.

* *

From an interesting article by Dr. J. S. Billings, in a recent number of the *American Journal of the Medical Sciences*, we (*Medical Examiner*) learn that at the beginning of 1876 there were in course of publication throughout the world about 280 regular medical journals. Of this number Germany and Austria had 57, France 52, Great Britain, not including her colonies, 29, the United States 46, Italy 41, Belgium 8, Mexico 8, Canada 7, Holland 6. As to the form of publication, the United States has the largest proportion of monthlies, and France and Germany of weeklies and bi-weeklies.

* *

In the *Indian Medical Gazette* Dr. Roy recommends injections of quinine in gonorrhœa cases. In most cases in which he has tried it he has found the cure completed within a week. In a few acute cases he says it took more than a fortnight, but generally the delay was attributable to irregular habits while under treatment. He prescribes for the injection 2 grains sulphate of quinine, dissolved by 8 minims of dilute sulphuric acid in an ounce of rose water; to be used twice for an injection. At the same time he gives a copaiha mixture.

* *

Mr. W. J. Haram Wood, L.R.C.P., writes to the *British Medical Journal* saying that he is very liable to colds, and as medical practitioners generally are particularly subject to such affections he reminds them of a sure and speedy cure suggested by Dr. C. J. B. Williams, one special advantage of which is that confinement to the house is not necessary:—It has been called the *dry plan*, and consists simply in abstinence from drink of any kind until a cure is effected. The theory upon which it is based cannot be better expressed than in the words of Sir T. Watson:—"The principle is that of cutting off the supply of watery materials to the blood. The wants of the system exhaust from the circulating fluid all that can be spared for the sustentation of the tissues, or for the natural evacuations, and there is nothing left to feed the unnatural secretion from the inflamed mucous membrane. Its capillary vessels cease to be congested; the morbid flux is diverted, and the inflammation starved away." For several years (continues Mr. Wood) I have made personal trial of this method, and have the highest opinion of its efficacy. The only drawback is the great thirst, which is at times distressing; but this is felt more, I believe, during the first twenty-four hours than subsequently, when one seems to become accustomed to it; and really it is as nothing, compared with the advantage of a diminishing defluxion, a freedom to follow one's occupation, and a certainty (I believe) of cure. But the chief advantage of the *dry method* has yet to be stated, and that is, it almost never leaves even a trace of bronchial irritation or cough of any kind; and I think this result is rarely attained by any other plan, especially where there is a tendency to anything of the sort.

Good as the method is, I think it may be made more complete and satisfactory by observing the following simple directions:—

1. Begin with a sharp aperient in the solid form of pills, swallowing them with as little water as possible.

2. The food should be rather less in quantity and more digestible than usual, and at first should be dry; later on, the moister forms of food are more easily swallowed and digested.

3. As much exercise as possible should be taken in warm clothing, to promote the action of skin and bowels.

The thirst often keeps one awake at night; but this may be prevented by taking a small opiate or fifteen minims of chloro-

dine, if necessary; and it is probable that the cold is also benefited by such a dose, but with this difference, that, when the dry treatment has been carried so far as to produce great thirst, it is almost certain that opium will not produce diaphoresis, and therefore does not render exposure more dangerous.

As a rule, I think it will be found that twenty-four hours give immense relief; thirty-six to forty-eight hours effect a cure; and sixty hours make it sure and certain. But, during the latter part of the time, I do not think the treatment is at all interfered with by a few teaspoonfuls of water taken with food; and in all cases the return to drink must be very gradual, commencing with small quantities of fluid, which, I need scarcely say, must be simple and non-stimulating.

* *

This is the story of "Smiler's Patent Health Lift," as told by the *Scientific American*:—

Dr. Smiler, says Max Adeler, had a large tank placed on the top of his house, from which to supply his bathroom, and so forth, with water. The water had to be pumped up about fifty feet from the cistern in the yard, and the doctor found it to be a pretty good-sized job, which would cause him constant expense. So, after thinking the matter over very carefully, one day an idea struck him. He built a room over the cistern, and put the word "Sanitarium" over the door. Then he concealed the pump machinery beneath the floor, and he rigged up a kind of complicated apparatus with handles and hinges and a crank, so that a man by standing in the middle of the machine and pulling the handle up and down would operate that pump. Then the doctor got out circulars and published advertisements about "Smiler's Patent Health Lift," and he secured testimonials from a thousand or so people who agreed that the health lift was the only hope for the physical salvation of the human race. Pretty soon people began to see about it, and Smiler would rush them out to the "Sanitarium" and set them to jerking the handles. And when a customer had pumped up fifty gallons or so, Smiler would charge him a quarter, and tell him that three months of that kind of thing would give him muscles like a prizefighter. The thing became so popular that he had to enlarge his tank and put in a smaller pump; and he not only got all his pumping done for nothing, but the people who did it paid him about \$1,500 dollars a year for the privilege. One day, however, Mr. Maginnis, who had been practising at the health lift every day for months, broke the board upon which he was standing, and plunged into the cistern, and just as he was sinking for the third time Smiler fished him out with a crooked nail at the end of a clothes prop. A few days later Maginnis came round with a lot of other patients, and cross-examined Smiler's servant girl, and learned about the truth, and then they went home mad. A consultation was held, at which they resolved to prosecute Smiler for damages and for obtaining money under false pretences. It is thought by good judges that, by the time the court get through with Smiler, it will be about the unhealthiest lift for him he was ever interested in.

A TRIAL took place in Paris towards the end of last year between the proprietors of two pharmaceutical publications, before the Tribunal de Commerce de la Seine. Some English advertisers may be acquainted with the *Moniteur de la Pharmacie*, published for a good many years by M. Philippe, of 6 Rue Gille-Cœur. M. Philippe was also an agent for the transfer of businesses. He having lately died, his business and journal were purchased by a M. Masson. This settled, a M. Philippe Kim established himself directly opposite number 6, started a journal which he called the *Messager de la Pharmacie*, got up in a style similar to the before-mentioned *Moniteur*, and offered to do the same class of business as M. Philippe had been in the habit of doing. Not satisfied with this, M. Kim inscribed his name on his office, putting the surname first, and making his Christian name the most prominent. M. Masson sued for 5,000 francs damages. The court judged that M. Kim had a right to publish his *Messager*, had a right to carry on his business at the address he had chosen, and had not incurred liability for damages; but that he had made an improper use of his Christian name. He was condemned to pay the costs of the action, to make certain modifications in the style of his journal (which he had already effected), and was henceforth prohibited from using his Christian name at all in any advertisement whatever, or to use it in any other manner, except by the initial P.



For particulars of Advertisements, Subscriptions, &c., please refer to the first page of Literary matter. An Index to the Advertisements contained in this issue will be found in the front portion of the Journal.

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Editorial Note

THE MILK OF SULPHUR PROSECUTIONS.

THE Chemists' and Druggists' Trade Association has not had to wait long for an opportunity of proving to the pharmaceutical world its right of existence. The brilliant defence of three Runcorn chemists, though for the moment unsuccessful, will show to the critics who think that this association is a mere cumberer of the ground what can be done by efficient trade organisation. It is not likely that private effort could have produced such weighty evidence before a bench of magistrates as was presented at Runcorn. If something like it could have been obtained, too, it is obvious that it would be grossly unfair to saddle all the expence on some two or three individuals for the service of the entire trade. It may be said that it is too early yet to glorify the association, considering that the result hitherto arrived at is not very encouraging. We are not of that opinion. It is a matter of ridiculously small importance to chemists and druggists whether they sell milk of sulphur or precipitated sulphur; it is mainly a question of public convenience. Whatever the ultimate decision may be is not in our view a matter of so much moment as it is to have, one way or the other, a final decision. And even should the judgment be that the sale of milk of sulphur is henceforth criminal, it is the public, not the chemists, who will be chiefly inconvenienced. In any case the action taken by the Chemists' Trade Association has abundantly vindicated the pharmaceutical profession from the stigma of a mean fraud which the public analysts have tried to fix upon us in this matter. When men like Professor Redwood and Mr. Oliver Pemberton swear that if they ask for milk of sulphur they expect to get a compound different from the precipitated sulphur of the present Pharmacopœia, and when they are able to give sound practical reasons for their preference, it seems little more than trifling to set up in opposition the mere assumption of Mr. Carter Bell, that when milk of sulphur is asked for something quite different is intended. It seems to us a mere superfluity of stupidity to ask for X, and then complain because one does not get Z.

One can hardly feel indignant with the Runcorn magistrates. Their perfect silence during the progress of the case, and the singular brevity of their judgment, indicate the foggy condition of their perceptions. Clearly their decision for the defence would have been of small value, and in such a case there would probably have been no chance of a more definite judgment. As

it is they bring us nearer to the end aimed at, namely, the establishment of an authoritative decision as to the right of the public to buy milk of sulphur such as they and their forefathers have been in the habit of taking.

PHARMACY FOR PHARMACEUTISTS.

"Oh, yeth, I underthand; but I don't know what ye mean," is one of the favourite Christy's Minstrels' witticisms. Mr. Sandford, at the last meeting of the Pharmaceutical Society, can hardly have designed to carve out for himself the position of an "end man," except in the acceptation of the term which would be readily conceded by all his colleagues. And yet his argument against Mr. Hampson's motion for a committee to try to improve the Pharmacy Act was a singular parody on Pompey's time-honoured joke. "I will not say the Pharmacy Act is perfect, but I am sure it cannot be improved," was the burden of his speeches. Never before this have we found ourselves at a loss to grasp Mr. Sandford's arguments; but now we are fairly puzzled. As usual, he was clear, definite, and decided in his statements; but we cannot do him the injustice of supposing that he would maintain the conclusions which he most distinctly indicates. According to him the Pharmacy Act is by no means a failure, not even in regard to co-operative stores dispensing medicines. The council has, according to Mr. Sandford himself, taken the highest legal advice on this question, and has (consequently, we suppose) decided to take no action. And yet the Act is by no means a failure! Because, says Mr. Sandford, its spirit is that the public shall be protected against mistakes made by unqualified persons; therefore, if public companies employ qualified persons to make up medicines they adhere to the spirit of the Act. No one can contradict Mr. Sandford on any matter relating to the Pharmacy Act, except with the utmost diffidence, for he was virtually its author. But how can we possibly accept such a statement as this from any authority? The most obvious feature of the Act is that it makes the *proprietor* of a business responsible to the law, and so long as he is registered it ignores entirely the qualifications of his servants. And these co-operative stores exactly reverse the order of things prescribed by law. The proprietors are not registered, though it may be that the servants are qualified. To save themselves from the legal consequences of this infringement of the law they adopt a couple of quibbles, which it appears are considered by high authorities sufficiently ingenious to be successful. Either they say, "We do not dispense medicines to the public; ours is co-operation simply; we dispense for each other, as one in a family may do for the rest;" or they put forward the name of their qualified assistant, and in case of action would make him appear as the proprietor of the dispensing concern. And yet the spirit of the Pharmacy Act is not broken!

But again says Mr. Sandford, "Do not go to Parliament. They will see you are only aiming after your private interests, and they may take from you even that which you have got." By all sorts of means, then, let them take it. A good proportion of the trade could bear to lose the Pharmacy Act without a vast display of mourning.

Does Mr. Sandford mean to say that Parliament was hoodwinked when they gave us the Pharmacy Act? Is that the reason why we are not to go before them and demand the fulfilment of the contract entered into with us? For that was the nature of the Act. We undertook, for the sake of public safety, to provide an efficient body of dispensers; in return, the Legislature undertook to protect our trade from the competition of unqualified persons. A fair enough bargain, surely, which, on their side, the chemists and druggists have observed to the letter; but which is being contemptuously broken and trampled upon by a section of the other parties to the contract—the public—in the dispensing departments of these gigantic stores.

We still venture to doubt whether we should go to Parliament before the cause has been tried in the law courts. As yet we have no evidence that the Pharmacy Act is not itself sufficient to prevent this illicit dispensing. But the decision concerning any attempt to test its value lies entirely with the Pharmaceutical Council. To suggest the possibility of their acting in a manner different to that in which they have acted is almost equivalent, according to those ultramontist apostles of the council's infallibility, Messrs. Atkins and Stacey, to a vote of censure. Perhaps it may be open to that interpretation; but it is hardly likely to be effective unless at the next election the society resolves to elect fourteen gentlemen pledged to a settlement of this stinging question for us or against us.

THE U. S. PHARMACOPEIA.

SOME discussion, slightly tinged with bitterness, has occurred in American pharmaceutical circles in reference to the composition of the committee responsible for the publication of the U.S. Pharmacopœia. Somewhat like the case here, the American Medical Association has at present exclusive control over the work. The pharmacists naturally think that they have some right to be officially represented on the committee, and some of them claim an equal, others even a preponderating, influence over a work which, as they say, should be the text book of pharmacy. The position there is, however, somewhat special, inasmuch as, apart from the copyright in the title common to every book, the U.S. Pharmacopœia has no legal status. It is only by common consent that it is accepted as authoritative. Consequently, some of the more eager pharmacists are disposed to go so far as to advocate the publication of an opposition Pharmacopœia, unless their claim to an equal share in the production of the existing work be admitted. Dr. Squibb, who is the statesman of American pharmacy, as well as its most able scientific exponent, is not of this view. At a recent "conversational meeting" of the New York College of Pharmacy, he treated the subject with much force and clearness. Touching the special point at issue, he advocates the election of a committee of five, three to be medical and two pharmaceutical members, to be entrusted with the preparation and publication of the Pharmacopœias. He gives his reasons for this proposition, which will be generally obvious. But he makes other suggestions which might be considered with benefit in countries beyond America. He would have this committee permanent, meeting, say every three months, the president and an editor (who is to be in addition to the five) to be continuously occupied in preparing materials for the quarterly meetings. The object of this regular work Dr. Squibb thus explains. He would have a standard Pharmacopœia issued every five years, and, in addition, he proposes that the authorities of the Pharmacopœia should issue an annual fasciculus, which should never be dignified with the standard force and authority given to the established Pharmacopœia, but be more ephemeral—a year book, in short, which would expire at the end of each year, and contain the current information of the previous year. Such an annual might contain a great deal which would not be looked upon as suitable to be retained or admitted in the Pharmacopœia proper. It might contain a description of all the novelties which come along—for instance, such an article as *jaborandi*, of which there was little or nothing known when it came into use—and it would have competent authority, as soon as anything of that kind was published, to send for the article, to put it upon trial, place it in the hands of proper men after it had been properly prepared, put it in the way of being used in hospitals, and so get all the information possible and publish the results of the observations in the next succeeding year. The Pharmacopœia would still be essential and indispensable, because it would be the standard; but for obtaining current information a work such

as the one described would be more useful to physicians and to the pharmacists than the Pharmacopœia itself. From it could be obtained information quite inappropriate to a standard Pharmacopœia. Within two years the necessary information could be obtained regarding any article that might be proposed as a therapeutical agent, which would either discard it entirely, or place it upon further trial, or introduce it into the Pharmacopœia. At present all the novelties are in risk of being lost, or so perverted and extolled that they are dropped, or get into commercial hands and become used as proprietary medicines in one way or another.

Dr. Squibb not unreasonably estimates that the profit on such a publication would ultimately prove sufficient to pay a proper salary to the proposed editor and fair remuneration to the members of the committee for the time and labour which they would be required to devote to the task suggested.

COLOUR PRINTING.

Long and laborious efforts have been made to accomplish the art of printing in various colours at one impression. At length, it is said, that object has been attained. Mr. Meyerstein gave a lecture at the Society of Arts last month, in which he described a process invented by a German, a Mr. Otto Radde, of Hamburg, who has certainly succeeded in producing good pictures with any number of various colours in them, all at one working. The main points of the process seem to lie, first, in having colours all of which are of one specific gravity, and melt at one point. With these a "colour block" is produced, from which, by an exact adjustment of heat and pressure, impressions may be taken. This involves machinery of the utmost delicacy and ingenuity. A paper for such prints has also had to be specially manufactured, or, we should say, invented, as it was necessary that it should be absorbent and even in texture, and free from starch and chemicals. The *Journal of the Society of Arts* of December contained a specimen print by this process, with some forty shades upon it. The inventor designates his invention "Stenochromy."

CATCHING TRAINS.

An excellent article appears in a recent number of the *Sanitary Record* on the dangers resulting from the habit exemplified every day at every railway station in and round London of business men rushing breathlessly for their trains to or from the City. It is a warning which is much needed. Some melancholy cases of deaths have been reported of late, resulting from this sudden exertion. For instance:—A gentleman and his son the other morning were a little late for their customary town train on the South-Western, and had "to make a run for it." They were successful in their attempt, and caught the train; but the younger gentleman gasped for breath, made a few motions with his hand, and would have fallen if he had not been caught. Before the train arrived at the next station he was dead. The verdict of the coroner's jury, following the opinion of the medical witness, was to the effect—"That death arose from syncope of the heart, brought on by running, after a hearty meal."

A lesson of this kind should be well observed. The men who make these frantic efforts to catch a train are generally quite the reverse of trained athletes. Their occupations are mostly sedentary, and they are consequently in the worst possible physical condition to subject themselves to the violent strain of violent muscles which they incur. If actual cases of sudden death are rare from this cause, none the less is it more than probable that fatal results are largely occasioned by the pernicious habit of delaying the journey to the station till the very latest moment. The man who can watch his vanishing though coveted train with a peaceful smile, and who knows how to enjoy his consequent enforced idleness, is likely to find more time for his occupations in the long run after all.

DR. NEWTON AND MILK OF SULPHUR.

We related last month how Dr. Newton, the medico-clerical magistrate of Ashton-under-Lyne, after proclaiming to the world from the bench that "a drachm of this mixture [milk of sulphur] given to a child would, in all probability, cause congestion and inflammation of the bowels, and even death," sold (by his servant) precisely the same article in his druggist's shop in Ashton. We give him the benefit of the explanation of this circumstance which he has thought fit to write to one of the local papers. After attempting to justify his judgment and his opinion in regard to milk of sulphur, he adds:—

In conclusion, I will just state what I know about the impure milk of sulphur said to be purchased at my shop, a part of which was not left as a guarantee against any tampering. Where sharp practice is intended is this even-handed justice? My manager left my shop on November 4 last to begin business for himself. While he was with me I have sometimes been weeks without seeing the shop. On Monday morning, when I read the letter referred to, I did not know that there was any impure milk of sulphur in my establishment. I immediately sent to inquire if there was any such in stock; if so, it was to be brought to me at once. I received about a half of a 7 lb. paper bag, and I had it sprinkled on my gooseberry trees without delay. On Tuesday I went to the shop and made further inquiry. The young man told me that our late manager had procured a small parcel of cheap milk of sulphur, to meet the price offered by a certain customer; he also remarked at the same time that the other was too dear. I next opened the drawer containing the packets made up ready for sale. There were 15 one-ounce packets, the residue of a lot which had been put up some time. Every packet I tested and found pure; the stock both in the drawer and warehouse likewise pure. My shop has been supplied with pure drugs mainly from an old and highly respectable house, Heaton & Co., London, since I first opened, in May, 1851. Their traveller has specially waited upon me every quarter since that time. I have never been without their pure precipitate of sulphur since, which has been constantly in the shop for sale. Of this untoward occurrence I have stated the simple truth, and I know that those to whom I am known will believe me.

What is "pure precipitate of sulphur"? Milk of sulphur we know, and precipitated sulphur we know, but this is something new. We should have expected more accuracy from so learned a man.

BUTTON-SNAKE ROOT.

An extensive demand for the dried leaves of the button-snake root (*Liatris odoratissima*) has arisen among perfumers and tobaccoists in America, and the following particulars are from a far-away subscriber:—The "wild vanilla," as it is commonly called, and more vulgarly "hound's tongue," or "deer tongue," is found in East and South Florida and portions of lower Georgia. It grows abundantly on the edges of what are called "bays," i.e., low swampy places in the pine woods, which are partially grown over with bays (a species of magnolia). The odour of the leaves strongly resembles the real vanilla. Most of the species of *Liatris*, or button-snake root, have a tuber-like root, and long straight stems, upon which the numerous flower buds are crowded in a close spike. A number of these are cultivated as ornamental plants.

In *L. odoratissima*, the root leaves are from 8 to 12 inches long by 2 to 3 broad; those of the stem very small. The stem divides above into a broad, branching panicle of purple flowers, which make the plant a very attractive one. The fresh leaf has, when crushed, a disagreeable odour, but when pulled from the plant and dried in the shade for a day or so, it becomes highly fragrant, having a smell resembling vanilla or tonka bean, and similar to the sweet-scented vernal grass, but much stronger. This odour is developed by some chemical change made in the leaf during the process of drying, whereby the peculiar principle known as coumarin is formed.

Coumarin is found abundantly in the tonka bean of com-

merce, but so abundant is it in the liatris that it is often found in large quantities on the upper portions of a mass of the semi-dried leaves. It is readily sublimed by a low degree of heat (150°), and the heat generated in these masses or bundles is sufficient to sublime it on the upper or cooler layer. When found in this way coumariue is composed of snow-white, needle-shaped crystals, exceedingly fragrant, the leaf looking as though it had been out all night in cold, frosty weather.

The dried leaves, as before mentioned, furnish an article of commerce, and one that is steadily growing in importance. They are gathered principally on the St. John's River and its tributaries by the poorer people, and sold by them in small lots to the country storekeeper in exchange for goods: by these latter they are sent to the balers and packers, who forward them to New York for home use and exportation. Pilatka, on the St. John's River, is the headquarters of the trade. One may often see 75 or 100 bales of 200 lbs. each lying on the wharves awaiting shipment. One dealer at this place has received an order for as large a quantity as 150,000 lbs. Adults can gather from 150 to 400 lbs. of the green leaves in a day; native boys and girls nearly as much. The green leaves are taken home and dried in the shade, and lose about 80 or 85 per cent. in weight; they are then sold for from 3 to 6 cents per lb., yielding quite a good return for the labourer. The packer bales and ships, and realises from 8 to 12½ cents per lb. The dried leaves are used to give a flavour to cigars, snuff, and smoking tobacco. For cigars it is sufficient to place the leaves and cigars in alternate layers in a box, and allow the whole to remain together for several days; for snuff the leaves are dried, ground and mixed; they are mixed with smoking tobacco after being shredded up or granulated. A small quantity is sufficient to flavour a large mass of tobacco. Their odour is given off much more intensely on a damp day than on a dry one. Although large quantities of these leaves are consumed in America, a much larger quantity is shipped to France and Germany, where they are rapidly growing in favour. It is quite probable they will soon be used much more extensively by perfumers, and as they are known to keep the "wicked moth away" they may usefully replace the strong smelling camphor and tobacco stems.

MORISON'S PILLS IN FRANCE.

A TRIAL of interest and importance to proprietors of English patent medicines was decided by the Court of Appeal at Paris in reference to Morison's pills on November 30 last. The English proprietors of the pills in question, "Messrs. Evrard & Morisson," as the names are given in the report before us, had in 1869 made an arrangement with their French agent, a M. Couplier, whereby he was authorised, under certain reservations, to make use of the name of Morison. The principals seem to have thought that M. Couplier had gone beyond their contract in this matter in some respects, and after a trial before the Departmental Tribunal of Commerce of the Seine in 1874 a judgment in their favour was recorded, with 7,000 francs damages against M. Couplier, and an order to insert the judgment in four journals to be selected by the plaintiffs. The trial lately settled was an appeal from this decision. M. Couplier claimed that Morison's pills being a secret remedy not authorised by the Administration after preliminary approval by the Faculty of Medicine, the sale of them in France was itself contrary to law, and that consequently the proprietors could not maintain an action in respect of such sale. Messrs. Evrard & Morison themselves also lodged an "incidental appeal" against some points of the previous judgment.

After hearing the arguments of the advocates engaged, the Court decided entirely in M. Couplier's favour, reversing the previous decision, and condemning Messrs. Morison & Evrard in all the costs of both actions.

As the judgment will illustrate French law in regard to secret remedies, a translation of its essential paragraphs is here appended:—

The Court,—Considering that it has not been proved that the formula according to which Morison's pills have been prepared is inserted in the Codex; that this medicament has not been submitted to the Academy of Medicine for examination, and that the Minister of Agriculture and Commerce has not authorised the preparation, advertisement and sale of the same;

That in consequence it (*sic*) must be considered as a secret remedy. [Several judicial decisions are here quoted to further support this consideration.]

Considering that the sale and advertisement of secret remedies are prohibited and punishable by art. 32 and 36 of the law of 21 germinal, year xi., law of 28 pluviôse, year xiii., explanatory decree of 25 prairial, year xiii., and decree of May 3, 1850;

Considering that in placing on sale the said pills, and in advertising them for sale, either by circulars, or by labels attached to the boxes which contain them, Evrard & Morison have committed cumulatively the double misdemeanour which the laws and decrees cited above would repress;

Considering that a pharmaceutical product, sold as a secret remedy and without the necessary legal guarantees, cannot claim the protection of the law in respect to infringement of right;

Considering that Evrard & Morison cite in vain the Customs law of March 27, 1817; [The judgment here argues at length on this subject, from which it may be gathered that, under certain circumstances, some medicines may be imported after examination by the Superior School of Pharmacy, and that this authorisation had been obtained by Messrs. Evrard & Morison from the Controller of Customs at Boulogne.]

Considering that it would be contrary to legality, morality, and public order, if litigants could obtain damages in respect to even unfair competition in business forbidden by the law;

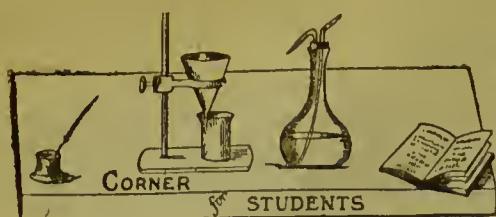
Declares, &c. [Here follows the judgment, which we have summarised above.]

In reference to this case Messrs. Morison & Co., of London, inform us that the Mr. Evrard here referred to is their general agent for France, and they add the following remarks:—

For many years past a set of forgers throughout the Continent have made facsimiles of the English Government stamps, with our names on them. We thought such a fraud on us and the English Exchequer would at once have been put down by the French authorities, as it would be in the case of forged bank notes, but it appears that our Government has no power to protect its own stamps on the Continent, and on the appeal lately tried in Paris the court gave judgment against us, in the face of the manifest wrong, on the ground that Morison's Pills were a secret remedy, *although the medicine has been admitted into France* (on the petition of some members of the French Legislature), *on payment of an ad valorem duty*.

MELON SUGAR.

A COMPANY has been formed in California with the object of cultivating melons for the purpose of producing sugar from them. There is every prospect of success in this enterprise. Sugar can be made with far less trouble from the melon than from the beet root; nothing like the same amount of purification is necessary. The cultivation and collection of melons is much easier than is that of beet root, and lastly the surplus of the melon can be turned to valuable account. The seeds yield an oil, excellently adapted for table use, while the final residue makes a nutritious cattle food. We imagine beet root can be grown in a smaller space than can melons to yield an equal proportion of sugar; but there are, doubtless, many parts of the world where this consideration would be overbalanced by the economy in the labour and expense of cultivation. It is a pity that melons are so comparatively disregarded in England. As a wholesome and pleasant addition to meals in summer time, they are much appreciated on the Continent, and would be so here if their employment became general.



CONDUCTED BY RICHARD J. MOSS, F.C.S.

ANOTHER of the chemical compounds of the Pharmacopœia will form the subject of the next analytical exercise. It is to be submitted to a systematic qualitative analysis, the name of the substance is to be determined, and a report made as to its purity.

Students who wish to compete should send us their names and addresses before the 20th inst. On the 25th samples of the substance will be forwarded.

Students' papers will be received up to February 15.

ANSWERS.

The white powder distributed for analysis in November consisted of Antimonium tartaratum (B.P.), adulterated with 50 per cent. of Potasse tartaras acida (B.P.); there was also a small quantity of calcium present, with a trace of iron and of the sulphuric radical.

This exercise affords an illustration of a species of adulteration not easily detected by mere qualitative analysis—the presence of certain normal constituents in excessive quantity. In such a case as this the student who plunges at once into the examination of the substance in the wet way places himself at a great disadvantage. If, however, he has submitted the substance to suitable preliminary tests, such as may be found in almost any of the text-books of qualitative analysis, he will have found that the substance swells up and blackens when heated, and therefore contains organic matter. He must have noticed the smell that is produced during the operation, and can scarcely fail to recognise it as characteristic of tartrates. Turning the residue left by this operation to proper account, the greater part of it is mixed with some sodium carbonate, and exposed on charcoal to the inner blowpipe flame. On removing the ignited mass and examining it carefully, using a lens if necessary, a white metallic bead is detected. This may be either silver, lead, antimony, or bismuth. On attempting to crush the bead it breaks into fragments; it is clearly not silver or lead, as they are malleable, so it must be either bismuth or antimony. If the bead is large enough it may be possible to find out which of these metals it consists of: it may be found that nitric acid oxidises it, and does not perceptibly dissolve it. The inference is that it is antimony. The remainder of the black mass that was produced by igniting the powder is used to try if there is anything present that imparts a characteristic colour to the Bunsen flame. For this purpose a piece of clean platinum wire is ignited in the blowpipe flame until it ceases to impart a colour to it. The wire is then moistened with hydrochloric acid, and a minute quantity of the powder made to adhere. On holding the wire in the Bunsen flame the violet tint which potassium imparts is easily recognised. Supposing no further information can be obtained from the preliminary examination, and that what has been learned is very questionable, the student now begins the next examination with the important information that the organic matter present is probably a tartrate, and that the substance appears to contain a white brittle metal, and potassium. He is not very clever if it does not occur to him that he is dealing with something very like tartar emetic. On proceeding to make a solution of the substance in water, it is found much less soluble than might be expected if it were tartar emetic only. Several of our correspondents went wrong at this step, and quite failed to notice that the behaviour of the substance with water was not like that of pure tartar emetic. The more observant noticed that there was a considerable portion difficultly soluble in water, and on examining this separately found it to be nearly pure potassium tartrate. The mistake is easily seen now, but not so easily avoided in future. However, if we state that a similar error must be carefully avoided in the next analysis, our correspondents will have the advantage of having been placed on their guard, so that they can make good use of the experience now gained.

Prizes.

The First Prize for the best analysis has been awarded to R. H. PARKER, 75 High Street, Barnstaple.

The Second Prize has been awarded to FRANK SUMMERS, 12 Abbeygate Street, Bury St. Edmunds.

Marks awarded for Analyses.

| | |
|-----------------------------------|----|
| R. H. Parker (1st prize) | 95 |
| Frank Summers (2nd prize) | 92 |
| Non Nullus | 90 |
| Tyro | 85 |
| Bicyclist | 85 |
| H. J. Jackson | 83 |
| Antimony | 83 |
| Machaon | 78 |
| Specific Gravity | 70 |
| Cymro | 70 |
| Fulcrum | 65 |
| Stibium | 65 |
| Pendletonian | 60 |
| C. J. B. | 60 |
| Indigo | 55 |
| Osmium | 55 |
| Testator | 52 |
| F. W. | 50 |
| W. Furlong | 50 |
| Tryma | 48 |
| Analyst | 45 |
| Bismuth | 45 |
| Cortam pete finem | 40 |
| Spes | 35 |
| Mg. | 35 |
| Ark | 35 |
| H. O. B. | 30 |
| H. | 10 |
| Alpha | 10 |

TO CORRESPONDENTS.

*. * All Communications should include the names and addresses of the writers.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

Tyro.—Your paper was very good so far as it went. You must remember that you have not only to prove the presence of certain substances, but also to show that others are absent; hence the necessity for a thorough systematic analysis.

Machaon.—Although your results are not far astray we cannot give you full credit for them, as they are obtained by defective methods, which would have failed to detect many impurities that might have been present.

Stibium.—Your paper was very good, except as regards the adulteration. It is very strange that it did not occur to you to examine the crystals that separated from the aqueous solution.

Pendletonian.—We are much obliged for your suggestion, but it would entirely defeat our object if we were to carry it out. If we set students an example which they had only to copy it would save them the trouble of learning. The form in which reports are drawn up is only a matter of convenience. Any analytical text-book will give you the information you require on this subject. Of course, the more neatly it is done the less trouble it is to examine the papers.

Indigo.—You state only the results obtained: we must know how you got them in order to estimate the value of your work.

W. Furlong.—You ought to state the inference you draw from each experiment, otherwise it is not easy to tell what object you had in view. See remarks to *Tyro*.

Analyst.—It is very unwise not to get the information so easily obtained by applying a few preliminary tests. You will see now that the examination which you describe could not possibly have revealed the presence of the excess of potassium tartrate.

Mg.—The silica and alumina which you found may have been derived from the enamel of the crucible in which you ignited the substance, as the potassium carbonate produced would decompose the silicates of the enamel at a high temperature.

H. O. B.—A careful analysis is necessary if you want to show that certain substances only are present.

H.—Your notions about solubility require remodelling. Consult your text-book about the preliminary examination of substances.

Alpha.—You need not be afraid of giving us too much information about what you did with the substance: a complete report is what we want.

APPROXIMATE QUANTITATIVE TESTS.

By J. BARKER SMITH.

First Paper.

THE author will endeavour to extend practical tests, which are simple and already in use, to an approximate estimation of the value of several drugs, chemicals, preparations, and methods.

The Permanganate Test.—For convenience a concentrated solution is first made by dissolving one gramme of potassium permanganate in 100 cubic centimetres of pure water. This solution is made and kept in a flask fitted with a well washed caoutchouc cork, and holding the required quantity. The actual solution used is one containing one decigramme per litre. 50 cubic centimetres of this solution is the quantity invariably taken, which, being put into a small flask, and acidulated with sulphuric acid, is shaken up with the solution or preparation to be estimated, regularly admitted from a burette, to complete decolourisation. It will be found convenient in examining tinctures and similar preparations to measure off the quantity equivalent to one part of drug, and dilute to 100, or, in the case of tannins and morphin, where the drugs are likely to contain more than 10 per cent., even to 1,000. The 50 cc. solution of permanganate is decolourised by 2.5 cc. of a solution of tannin containing one gramme per litre. Hence, whatever quantity of a solution is found to decolourise this constant quantity of permanganate is equivalent to .0025 gramme of tannin, from which the percentage may easily be calculated.

DIRECT ESTIMATIONS.—1. TANNINS.

Krameria Radix.—Cortical portion about one part and n half to one of central wood; the former yielded 27 per cent., the latter 7. Successive spirituous decoctions gave only 12½ per cent., but the official process for tincture 20. Process being considered satisfactory was applied to the following articles, with the results as quoted:—Oak bark, 8¼; Acorn pericarp, 2.8; Acorn cotyledons, 2.6 (have found 5 per cent. when collected in October); Mimosa virginialis, 10. *Vide* "THE CHEMIST AND DRUGGIST," May, 1876.

Quercus Cortex.—The official decoction extracted 8¼ per cent. of tannin. A second experiment gave 7½, and another 1.8 from residue by a repetition of the process. Percolation to 20 parts with cold water gave 6¼ per cent. of tannin extracted. In a second experiment, cold aqueous percolation was compared with the official decoction, with the following result, quantities being the same:—Percolation, carefully performed and lasting twenty minutes, extracted 6.6 per cent., and a repetition of process with residue another 1.8. Percolates much less coloured than decoctions. Colouring matter did not appear to contain glucose.

Granati Radicis Cortex.—Smaller specimens gave by spirituous decoctions (easily decomposed by boiling with sulphuric acid, as others have observed), 16 per cent. Coarser specimens gave by cold aqueous percolation carried to 20 parts, when percolation becomes difficult, a total of 13¼.

It will be interesting to mention here the progression of percolation exhibited by the percolates of both oak bark and pomegranate, divided for the purpose. Suppose a substance is exhausted by 20 parts of a menstruum, then the first five parts of the percolate will contain about half the total extracted, and the second five parts a quarter.

Kino.—A recently prepared official tincture gave 83 per cent. of tannin equivalent for the drug; in about two months the same tincture showed 50. The tincture evaporated to dryness gave 8 per cent. of extract, showing that 80 per cent. of the drug remained in solution, and that some process of hydration or oxidation takes place. More than 12 per cent. of the extract dissolved temporarily in cold water; no evidence of glucose.

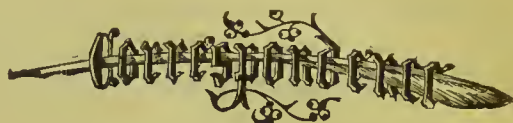
The tincture diluted a hundred times with distilled water strikes a blue colour with ferrous sulphate, the same as the oak tannin. A sample of eucalyptus kino yielded only 20 per cent. of the tannin equivalent.

Catechu Nigrum.—The tincture, without cinnamon, gives a percentage of 50 (higher when just made); the same result after two months. The tincture evaporated to dryness gave 9 per cent. of extract, or 72 per cent. of drug remaining in tincture. Parts soluble and insoluble in water approximating in decolourising power. The tincture, diluted so that one part

of drug is contained in a thousand parts of pure water, is of a slightly brown colour, and gives an olive green tint with solution of ferrous sulphate.

Catechu Pallidum.—The tincture, but without cinnamon, from a percentage of 70, calculated on the crude drug, had fallen to 40 in about two months. The tincture, diluted as above, is turbid and scarcely coloured; it gives a grass green tint with solution of ferrous sulphate.

A commercial specimen of the tincture, made more than a year, gives a percentage of 32 for the crude drug. It does not appear to be made wholly from pale catechu. This tincture evaporated to dryness gives 7.5 per cent. of extract, showing that 60 per cent. of the drug is in solution.



THE MILK AND WATER ACT.

(38 & 39 Vict. c. 63.)

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—The following appeared in the *Times*, Thursday, December 14, under the head of "Police":—

Thomas Jones, milk dealer, of Fort Street, Spitalfields, was charged on a summons with selling milk adulterated with water. The prosecution was instituted by the Vestry of the parish of Whitechapel. The certificate of Dr. Tidy, analyst for the Whitechapel district, and Professor of Chemistry at the London Hospital, showed that the milk was adulterated with 18 per cent. of water. Mr. William White, a Professor of Chemistry, formerly of York Collegiate School and other colleges, said that on December 9—17 days after the purchase—he analysed a portion of the milk purchased, and found that it contained only 9 per cent. of water. The witness, in reply to the magistrate, said that he had known fresh milk to contain 18 per cent. of water, and chemists could not tell whether the water was added or was naturally present. Mr. Barstow considered the case proved, and declined to allow a reference to a third chemist to decide the disputed analysis. He fined the defendant 5*l.* and costs. James Patmore, of 144 Commercial Street, Spitalfields, was also fined 5*l.* and costs for a similar offence.

It appeared somewhat dubious whether this might imply a refusal by the "justices in their discretion," as provided in sec. 22 of the above Act.

I therefore addressed the following note to Mr. Thomas Jones, and by the same post enclosed Mr. James Patmore a copy of it:—

39 Mincing Lane, E.C.,
December 15, 1876.

Dear Sir,—If I thought that you or the dairyman had watered the milk, I would have nothing to say to you. I am, however, far from satisfied with the conviction in the way in which it is reported in the *Times* of Thursday. Is there a fuller report in any local paper? If you and your fellow victim, James Patmore, will bring this note with you at 12 o'clock to-morrow (Saturday), I may offer you some valuable information.

Yours truly,
R. M. HOLBORN.

To Mr. Thomas Jones, milk dealer, Fort Street, Spitalfields.

P.S.—Please put just one line in the post before 12 o'clock to-night.

I enclosed in either communication—

1. A P.O. envelope with printed address.
2. A ludicrous version of the famous butter case, *Brown v. Kelly*.

3. A sheet of extracts of the glaring contradictions of analysts before the Parliamentary Committee, Blue Book 262, such as questions 2,422, 2,423, 2,718, 2,935 to 2,937, 6,463 to 6,471, and fifty more.

I received no reply whatever from either Mr. Thos. Jones or Mr. Jas. Patmore. It may, therefore, be assumed that these men were rightly convicted.

I hear you say, But how do these milk matters particularly concern you, Mr. Holborn?

Sir, I will tell you.

1. The milk trade are the leaders of all offenders.
2. While my own trade, and almost every other trade, acquitted themselves triumphantly before the Parliamentary

Committee of 1874, the milk trade alone proved incontestably grossly criminal, e.g. question 2,421.

3. The most eminent and recurrent justification of the Act of 1872 was based upon its necessity in regard to milk; see 5,207 and other questions.

4. From the scandalous and almost universal fraud in milk prior to the Act of 1872, all other trades in drink, food, and medicine, have been made to suffer.

5. The milk practices are the mainstay of one of the most degrading, inquisitorial, and odious social organisations in this country, viz., that of public analysts.

Linen and wool are "adulterated" with cotton, though probably Mr. Samuel Morley, M.P., and others would repudiate the application of the term to their products at Nottingham and other places.

Silk is yet more adulterated with cotton, jute, and a score of vile materials, yet these palpable impositions do not bring down the condign punishment of clauses 3 and 4 in 38 and 39 Vict. c. 63.

No; the summary of the report of the committee, page 8, is contained in the words, "the public are *cheated* rather than *poisoned*." (N.B.—The italics are in report). The head and front of the milk offence is that it includes *both*: it is the *life* of the babe, the child, the invalid, and the pauper, that is sucked away by that filthy leech, the daughter of "the black cow."

Would you want an Act for citrate of magnesia, or those famous "iron filings" in tea of the late Dr. Lotheby, and of a living eminent advertiser and vendor of certificates?

Messrs. Cartcighe (2,845) and Bird, of Birmingham, can deal with such cases: it is the milk dealer who from first to last has been the bane of shopkeepers, and whom no organisation, even in their own trade, deems capable of any general system of defence.

I am, sir, yours truly,

R. M. HOLBORN.

39 Mincing Lane, E.C.:
December, 1876.

THE PREVENTION OF SCURVY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

MY DEAR SIR,—As in your review of my pamphlet on rendering salted meat more nutritious you say it is a guess on my part, although it is a happy guess, I beg to send you a copy of a letter which appeared in one of the Dublin papers, from which you will see that I have founded it upon more than a guess.

Yours truly,

Royal College of Science for Ireland,
Dublin: Dec. 18, 1876. ROBERT GALLOWAY.

SIR,—In your article on scurvy in yesterday's *Telegraph*, you refer to my plan for preventing the disease. Would you allow me space for a few observations on the subject. The object of my plan is to render the salted meat more nutritious, thereby preventing scurvy. This is to be effected in the following simple and natural manner:—Certain substances go to form or constitute flesh; during the operation of salting the flesh some of these substances are removed and carried away in the brine; the chief of these substances is a salt called phosphate of potash. As this salt was necessary for the formation of the flesh in the first instance, it is evident that salted meat cannot be converted into flesh when eaten unless this salt be added to it at or before the time the meat is eaten. Therefore, I recommend this salt to be employed with salted meat in order to render it more nutritious. Such is my plan. Can anything be simpler and more rational? Every human being follows a similar plan with fresh food: when he consumes it he takes or adds along with it a little common salt; and why does he take the salt? Because fresh food is deficient in soda salts, and certain soda salts are required for the formation of the blood. Salted meat is deficient in potash salts, and certain potash salts are required for the formation of the juice of the flesh; therefore phosphate of potash ought to be employed with salted meat as we employ common salt with fresh meat.

I sent my pamphlet, on its publication, to the heads of the different Government departments; the only department that did not acknowledge the receipt of it was the Admiralty. I also sent it to most of the members of both Houses of Parliament. Some did not acknowledge the receipt; others did, and admitted the great importance of the subject. This was before the return of the Arctic Expedition, but with the exception of the member for South Shetland, Mr. Stephenson, who has taken a great interest in the subject, not one M.P. went beyond acknowledging its importance.

We are now, according to the newspapers, to have a commission to inquire into the subject. The commission will, no doubt, call before them

eminent medical men, and the questions and answers will no doubt appear very profound and very satisfactory to the unlearned in medical lore; but I venture to predict that one thing will not be recommended to be done—the one thing which would best reveal how salted meat acts on the system. That one thing is a thorough analytical examination of the excretions of those who are subsisting on diet which produces scurvy.—I am, sir, &c.,

ROBERT GALLOWAY, Professor of Chemistry.

AN EXPLANATION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—I notice in your impression of December 15, page 506, that you state you are informed by circular from Messrs. Evans, Lescher & Evans that "Mr. William Gibson is no longer in their employ, nor is he empowered to represent them in any way." No doubt Messrs. Evans, Lescher & Evans were justified in sending a circular to those of their customers where I was known as representing them, but it left me empowered to explain personally the cause of my leaving their service. Such an ambiguous notice, however, appearing in a journal with such an extensive circulation as yours, is calculated to do me a great amount of injury; and as the hitch between Messrs. Evans, Lescher & Evans and myself was quite of a personal character, and through no breach of trust whatever, I shall feel obliged if you will do me the justice to make this fact known to your numerous readers by the insertion of this letter in your next issue.

I am, dear sir, yours obediently,

14 Duke Street, Little Britain:

WM. GIBSON.

January 4, 1877.

PHARMACALIA AND NEWCASTLE-ON-TYNE.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Kindly allow me a short space in your valuable journal to make a few comments upon the letters by Mr. Mackay, in order to dispel some erroneous impressions which would probably be produced upon the minds of your readers by certain of his statements.

Referring to the letter which appeared in the *Pharmaceutical Journal* of October 18, he there states that he failed to obtain one more student to complete a class for the study of human physiology. It would be interesting to know in what direction he (and the seven others) sought for the one student needful, as he can scarcely be said to have directed his attention to the assistants of his own calling in the town, since I can emphatically state that to the employes of several of the principal establishments the appearance of his letter was the first intimation of any such desire upon his part. I may state that two of these firms alone employ some 15 or 16 assistants between them, and where did he expect to find the requisite *one* if he did not canvass these?

As to the science classes being deserted, it will perhaps be sufficient to state that one of the mechanics' institutes of this town succeeded in passing more candidates at the 1875 examination of the Science and Art Department than any other similar institution in the kingdom, and that during the present session all the classes at this institute are remarkably well attended.

In the face of these facts I cannot understand how Mr. Mackay can say that "it is a source of regret that in this enlightened age inclination for mental advancement and even desire for erudition (which I take to be one and the same thing) should be at such a low ebb," and indeed entirely fail to see how the age can be called "enlightened" if matters are so bad as he would fain make them appear.

Regarding the specimens of "the Newcastle Chemists' Assistants' Association," I beg to refer him to the minutes of its last meeting, when he will perceive that instead of being "consigned to the cellars of a sympathising pharmacist in the neighbourhood," it was resolved "that they be entrusted to the care of certain members, who shall keep them in proper order, and that they be at any time open to the inspection of other members."

I think, Mr. Editor, these few explanations will fully bear out opinions expressed by you in your issue of November 15.

Newcastle-on-Tyne:

I am, sir, yours faithfully,

January 8, 1877.

HENRY M. HUGHES.

PATENT MEDICINE DUTY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—For the information of your numerous readers, and the trade generally, would you kindly insert in your next issue a copy of the accompanying letter from the Board of Inland Revenue, and oblige
 Yours faithfully,
 B. ROBINSON.
 Pendleton, Manchester.
 January 12, 1877.

Inland Revenue, Solicitors' Department,
 Somerset House, London, W.C.
 January 11, 1877.

SIR,—In reply to your inquiry of this day I beg to say that the "Universal Corn and Wart Pencil," as sold by you, is not liable to Medicine Stamp Duty.

I am, sir, your obedient servant,
 Mr. B. Robinson, Chemist,
 Manchester.

W. H. MELVILLE.
 Solicitor of Inland Revenue.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—You repeatedly recommend correspondents to apply to the Inland Revenue Office when they ask your opinion as to whether a certain label renders an article liable to stamp duty. I sent the following label:—

CHILBLAIN LOTION.

Paint the part affected twice or three times a day with the camel's hair pencil. It may be applied oftener if the irritation is excessive.

[NAME AND ADDRESS ONLY].

asking whether a medicine stamp would be necessary? Enclosed is the reply, which does not add to my information, as the extracts from Acts of Parliament mentioned are only such as every chemist knows.

Now, sir, either the Board does or does not know whether this label comes within the Act. If it does know, surely it ought to afford me the information sought, by giving a definite answer, yes or no; if the Board does not know how can I be expected to?

What am I to do, Mr. Editor? Take my chance of an Excise prosecution, or put stamps on and charge my customers three-halfpence extra?

Yours truly,

A PERPLEXED CHEMIST.

Inland Revenue, Somerset House, London, W.C.

December 16, 1876.

SIR,—I have laid before the Board of Inland Revenue your letter of the 7th inst., requesting to be informed whether the preparation mentioned in the label therein enclosed is liable to Medicine Stamp Duty, and with a view to affording you the information thus sought I am directed to transmit herewith a printed extract from the Acts of Parliament in regard to the Stamp Duty on Medicines.

I am, sir, your obedient servant,

A. A. WATTS.

Assistant Secretary.

The following is the circular referred to in the foregoing letter:—

MEDICINE DUTY.

STAMP DUTY.

(44 Geo. III., c. 98, sched. B.)

For and upon every packet, box, bottle, pot, phial, or other inclosure containing any drugs, herbs, pills, waters, essences, tinctures, powders, or other preparation or composition whatsoever, used or applied or to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body, which shall be uttered or vended in Great Britain, where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall not exceed the price or value of one shilling, 1*d*.

| | s. | d. | | s. | d. | | £ | s. | d. |
|--------------|----|----|----------------|----|----|----|----|----|-----|
| Shall exceed | 1 | 0 | and not exceed | 2 | 6 | .. | .. | 0 | 0 |
| " | 2 | 6 | " | 4 | 0 | .. | .. | 0 | 6 |
| " | 4 | 0 | " | 10 | 0 | .. | .. | 0 | 10 |
| " | 10 | 0 | " | 20 | 0 | .. | .. | 0 | 20 |
| " | 20 | 0 | " | 30 | 0 | .. | .. | 0 | 30 |
| " | 30 | 0 | " | 50 | 0 | .. | .. | 0 | 100 |
| " | 50 | 0 | .. | .. | .. | .. | .. | 1 | 00 |

MEDICINES CHARGED WITH STAMP DUTY.

(52 Geo. III., c. 150.)

The various articles specified by name in the schedule, which includes

"Foreign Medicines of all kinds except Drugs,"

And also all other pills, powders, lozenges, tinctures, potions, cordials,

electuaries, plaisters, unguents, salves, ointments, drops, lotions, oils, spirits, medicated herbs and waters, chemical and official preparations whatsoever, to be used or applied externally or internally as medicines or medicaments, for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body, made, prepared, uttered, vended, or exposed to sale, by any person or persons whatsoever.

Wherein the persons making, preparing, uttering, vending, or exposing to sale the same, hath or claims to have any occult secret or art for making or preparing the same;

Or hath or claims to have any exclusive right or title to the making or preparing the same;

Or which have at any time heretofore been, now are, or shall hereafter be prepared, uttered, vended, or exposed to sale under the authority of any letters patent under the Great Seal;

Or which have at any time heretofore been, now are, or shall hereafter be, by any public notice or advertisement, or by any written or printed papers or hand-bills, or by any label or words written or printed, affixed to or delivered with any packet, box, bottle, phial, or other inclosure containing the same, held out or recommended to the public by the makers, vendors, or proprietors thereof as nostrums, or proprietary medicines, or as specifics, or as beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint, incident to or in anywise affecting the human body.

EXEMPTIONS.

(52 Geo. III., c. 150.)

All medicinal drugs whatsoever which shall be uttered or vended entire without any mixture or composition with any other drug or ingredient whatsoever.

Ginger and peppermint lozenges or any other article of confectionery, unless the person vending the same shall vend the same as medicines or as beneficial for the prevention, cure, or relief of any distemper, malady, ailment, or disorder incident to or in anywise affecting the human body.

(3 & 4 Will. IV., c. 97, s. 20.)

All artificial mineral waters, and all waters impregnated with soda or mineral alkali, or with carbonic acid gas, and all compositions in a liquid or solid state to be used for the purpose of compounding or making any of the said waters.

EXCISE LICENSE.

(38 Vict., c. 23, s. 8.)

An excise license is required to be taken out yearly in any part of Great Britain by the owners, proprietors, makers, and compounders of and persons uttering, vending, or exposing to sale, or keeping ready for sale any medicine liable to Stamp Duty.

The duty on each such license is 5*s*.

Any person selling an article liable to Stamp Duty without having a license incurs a penalty of 20*l*. under 42 Geo. III., c. 56, s. 9, and any person, whether licensed or not, selling any such article unstamped incurs a penalty of 10*l*. in respect of every offence under 52 Geo. III., c. 150, s. 2.

* *

[The contrast between the replies quoted above is curious and instructive. It seems to us to demand some attention. The reply furnished to "A Perplexed Chemist" is the usual official stereotype—that to Mr. Robinson is clear, concise, and definite. Singularly, the two articles are—at least, we think so—precisely analogous. Following strictly the letter of the Act of Parliament, both, we presume, might be proved to be liable to medicine stamp duty, but, following the interpretation of that Act which the Inland Revenue Board has almost uniformly adopted, we should expect that both articles would be allowed to be sold without the stamp. It must be admitted that a lotion labelled "chilblain lotion" is "held out" to the public as beneficial in a certain complaint affecting the human body. So also the words "corn pencil" imply the same recommendation, and yet in the one case the Board of Inland Revenue says explicitly the article is not liable to medicine stamp; in the other case the reply is not so explicit, but, if our acquaintance with the English language were our only guide it would be unmistakable that the "chilblain lotion" is liable to medicine stamp duty.

We think the authorities at Somerset House ought to avoid this obscurity of expression: we think they may fairly be asked to state definitely what is their principle of interpretation, or if they are not able or disposed to give us a general guide, they might at least return an answer to every applicant which he could not misconstrue; and we think, lastly, that if they prefer to leave a margin of debatable ground in reference to these articles, they ought at least to be just all round. As we understand their replies they allow Mr. Robinson's corn pencils to be sold without stamps, but they demand that "A Perplexed Chemist's" chilblain lotion shall be stamped. What we ask is that there shall be some possibility of outsiders being able to discover where lies the point of difference.—ED. C. & D.]



THE MILK OF SULPHUR PROSECUTIONS AT RUNCORN.

Specially reported for this Journal.

On Wednesday, the 27th ult., at the Runcorn Police Court, before Mr. William Bankee and Mr. Henry Reynolds, George Marshall, chemist and druggist, of Devonshire Place, Runcorn, was summoned for "that he did unlawfully sell to one James Steen, an inspector of weights and measures, a certain article or drug, to wit, two ounces of milk of sulphur, the same not being of the nature, substance and quality, of the article demanded by the said James Steen." Isaac Speakman and Andrew Brown, chemists, were also summoned for having sold milk of sulphur, which it was alleged was adulterated with sulphate of lime. Mr. Marshall is a member of the Runcorn Improvement Commissioners, and holds several public offices, and the charge against him excited considerable attention, from the respectability of his position and the formidable defence which the Chemists' and Druggists' Trade Association made against the prosecution. Instructed by Mr. Haydon, the secretary of the association, Mr. Henry Glaisyer, LL.B., of Birmingham, defended. It was agreed to take Mr. Marshall's case as a test case, and to abide at that court by the decision for the decisions in the other cases. The defendant, Mr. Marshall, having pleaded not guilty to the charge,

Superintendent Steen said—On December 1 he visited the defendant's shop, and asked for two ounces of milk of sulphur, and after he had received it he told Mr. Marshall it was for analytical purposes. It was forwarded to Mr. Carter Bell, the county analyst, at Manchester, who certified that the sample forwarded was adulterated with 58 per cent. of hydrated sulphate of lime, or the elements of plaster of Paris. In cross-examination by Mr. Glaisyer, the witness said he asked for milk of sulphur. He did not know an article called precipitated sulphur, and did not mention it to Mr. Marshall. If Mr. Marshall told him that it was not pure sulphur, but a preparation sold as milk of sulphur, it was after the article had been purchased. Witness offered to divide the article with Mr. Marshall, but he said he did not require it. The sample was sealed at the police station, and not in Mr. Marshall's presence.

Joseph Carter Bell, of 12 Radford Street, Manchester, said he was the county analyst, and he had analysed the sample of milk of sulphur sent him by Mr. Steen, and had discovered that it contained 58 per cent. of hydrated sulphate of lime, the remainder being sulphur.

By the Clerk: Do you call that milk of sulphur?

Witness: Impure milk of sulphur.

In what respect is it impure?

Witness: Because milk of sulphur ought to be all pure.

In cross-examination by Mr. Glaisyer, Mr. J. Carter Bell said the lime was the ordinary sulphate of lime, with a water constituent. Milk of sulphur was not mentioned in the last Pharmacopœia.

Do you find *sulph. precip.*?

Witness: It is the same thing. They are not distinct preparations. He did not know a work published by Mr. Gray in 1836, and called "A Supplement to the Pharmacopœia." He objected

to the book being produced, because it was a book for manufacturing purposes, and their Worship would understand that it was to the interest of the manufacturer to make as much out of his products as he could. One man might make 3 lbs. of milk of sulphur of 1 lb. of sulphur, and make a poor article, whereas another might only make 1 lb. of milk of sulphur from 1 lb. of sulphur.

Mr. Glaisyer put in Mr. Gray's recipes for making milk of sulphur and precipitated sulphur, which the witness read, and remarked that in the course of preparation the lime would be precipitated. Sulphate of lime added to and increased the bulk and weight of the article.

What would be the distinction between these two preparations?—One would be pure sulphur, and the other would contain about 60 per cent. of sulphate of lime.

That would be the first preparation under the head of milk of sulphur?—Yee, and it would be a great advantage to the man who makes it.

Would it produce an article similar to what you have examined in this case?—It would.

Would the second produce an article known as precipitated sulphur?—It would, and milk of sulphur too.

Mr. Glaisyer: That I contest.

The witness went on to say that the same preparation, "precipitated sulphur," was synonymous with milk of sulphur. The name milk of sulphur was not mentioned in the last Pharmacopœia at all. It was not mentioned as a synonym. He thought both preparations mentioned by Mr. Gray were still made, but they were not sold as distinct substances to his knowledge. In Salford recently nine shops were visited, and nine samples of milk of sulphur obtained, of which eight were perfectly pure, and one was adulterated. Milk of sulphur meant pure sulphur. A hundred years ago there was only one adulterated article prepared with sulphate of lime sold. Now, since the Adulteration Act had been put into force, the pure article was sold. He did not know what the original preparation was in the Pharmacopœia of 1721, but one about 150 years ago directed sulphuric acid to be used, and he believed since then in all the editions of the Pharmacopœia it had been discontinued. It was well known that impure milk of sulphur contained sulphate of lime. Could not say that it had ever been officially forbidden. He was prepared to say that milk of sulphur prepared so as to contain sulphate of lime was an adulterated article, on the ground that it contained a foreign ingredient which was not pure sulphur. In support of his statements he read extracts from the *Analyst* of June 30, 1876.

Mr. Glaisyer: Then, as I understand it, you base your grounds on other people's opinion?

Witness: Exactly; the same as you do.

In answer to further questioning, the witness said precipitated sulphur did not mix so easily in water as the other, but he did not think that the presence of sulphate of lime aided in dissolving the milk of sulphur.

Mr. Glaisyer: Is there a considerable difference of opinion amongst medical men whether milk of sulphur prepared with sulphate of lime or *sulph. precip.* without is better for use as a medicine?

Witness: All whom I have consulted say pure milk of sulphur ought to be used, and they are surprised when a mixture of sulphate of lime and milk of sulphur is used. Was not aware whether there was any difference in the taste or smell. He could not see that there would be any difficulty in taking it. Milk of sulphur was often made up with confections, such as jam, and it easily mixed up. One containing sulphate of lime might mix a little more easily, but he had never tried it. The presence of sulphate of lime tended to decrease the efficacy of the sulphur by decreasing its laxative properties. Sulphate of lime did not act as an aperient.

The Magistrate's Clerk: Is not the question before the Bench whether Mr. Steen was supplied with a pure article or not? Do you contend that it contains lime or not?

Mr. Glaisyer: I contend that milk of sulphur and *sulph. precip.* are distinct preparations.

The Clerk: Why is the name of milk of sulphur left out of the Pharmacopœia, but because they will not recognise an adulterated article?

Mr. Glaisyer: That is not so at all.

The Clerk: Are you going to controvert that milk of sulphur is not pure sulphur?

Mr. Glaisyer: Most distinctly.

Mr. Glaisyer then addressed the Bench for the defence, and

said he appeared there on behalf of the defendant, Mr. George Marshall, and at the same time he represented the Chemists' and Druggists' Trade Association of Great Britain, and he might here remark that the association, whilst it would endeavour to assist the authorities in bringing to justice any persons who infringed the Act, would also endeavour to defend its members against being unjustly harassed by what they regarded as groundless prosecutions, and therefore he was instructed to attend on behalf of the defendants. The defendant Mr. George Marshall was a gentleman well known to the Bench, and who had for many years been a resident in the town. He held several public appointments, had been there for fifteen years, and up to the present time there had been no imputation of any fraud being committed by him on the public, nor any charge of unskilfulness in his trade. The present case was similar to those which had occupied a good deal of attention throughout the country, and the association were desirous of making this a test case, that it might form a precedent for the future, and settle if possible the vexed question as to whether milk of sulphur containing sulphate of lime should be sold as an article of commerce. They had given him instructions to raise no legal objections which might upset the case, but let it rest entirely on the main issue. The prosecution must prove that the article sold was not of the nature, substance, and quality of the article demanded by the purchaser, and he would prove that it was so. Dr. Bell had asserted that *sulph. precip.* and milk of sulphur were synonymous, and that if a person had asked for *lac sulph.* he should obtain the same article as if he asked for *sulph. precip.* He (Mr. Glaisyer) would prove that both preparations were distinct, and prepared according to distinct formulas. He would put the case stronger. If a person asked for milk of sulphur and was supplied with *sulph. precip.* or pure sulphur, then the purchaser would have a right to prosecute the vendor for not supplying the article demanded. He would show that the two drugs were entirely distinct, and upon that ground he would ask for the dismissal of the summons. If their Worships looked at the Pharmacopœia of 1721 they would see that milk of sulphur might be prepared in either of two ways—one which would produce a preparation containing sulphate of lime, and the other a preparation which did not contain sulphate of lime. They might fairly surmise that it was found that the former preparation was more favoured amongst medical men, because the latter, which would be made to contain no sulphate of lime, was dropped out entirely from the Pharmacopœia next published, that of 1746. In Gray's "Supplement" there were two distinct preparations given, which would show that the terms were not synonymous. As to the argument about it being left out of the Pharmacopœia, Dr. Redwood, whom he would call as a witness for the defence, would tell them that there were other drugs formerly prepared according to the old Pharmacopœia, but omitted from the present Pharmacopœia, and upon that he would argue that milk of sulphur was not a preparation tabooed by the profession, although it was not authorised, by the British Pharmacopœia last published, but that it was a well-known preparation, and constantly used. He would also prove that *sulph. precip.* did not contain sulphate of lime, but that *lac sulph.* did, and he would not only do this, but he would contend that according to the first exemption mentioned in the sixth section he was entitled to a dismissal. He would show that the presence of the sulphate of lime was necessary to make it an article of commerce, and that it was not injurious to health. In support of this he would call the highest medical evidence it was possible to obtain. One was Dr. Redwood, and the other Mr. Pemberton, of Birmingham, both gentlemen of the highest distinction and skill, who would agree in the opinion that, far from sulphate of lime being injurious to health, it was really an advantage. They would tell the Bench that the sulphate of lime rendered the sulphur more active, not only by its stimulating action on the intestines, but by mechanically dividing the particles of sulphur that are left in the stomach, that it rendered the sulphur more soluble, whilst the other caused disagreeable eructations. Mr. Pemberton would tell the Bench that he always used *lac sulph.* in his prescriptions, the article, in fact, which formed the subject of the present inquiry, and he was sure that anybody who knew Mr. Pemberton in Birmingham would venture to say that his prescription never did anybody any harm. He would also call the wholesale druggists who supplied the drugs, and they would tell the Bench that the manufacturers of this milk of sulphur, Messrs. Albright & Wilson, of Birmingham, had obtained a gold medal at the International

Exhibition of 1862 for the excellency and purity of the two products they exhibited, milk of sulphur and precipitated sulphur. All this he would prove, and he would ask the Bench after hearing the evidence to dismiss the case.

Mr. George Marshall, the defendant, was the first witness called for the defence. He said he had been in business for himself 20 years. When Superintendent Steen called on him his (defendant's) dog was running about the shop, and the Superintendent began a conversation about the dog and its merits and about dogs in general, and wound up the conversation by asking for some milk of sulphur. He supplied him with two ounces of milk of sulphur or *lac sulph.*, for which he paid 2d. He distinctly told him it was not precipitated sulphur, but that it was the milk of sulphur that had been sold for a hundred years. He distinctly told him it was not *sulph. precip.* Witness only once purchased *sulph. precip.*, and his customers returned it and would not use it. They said it was nauseous, and he had great difficulty in disposing of it. With that exception he had always kept milk of sulphur, which contained sulphate of lime, and he had never received any complaints of the article. It was never taken with jam or confections, but generally with water. It was more saleable than the other, and it was a most useful article.

Cross-examined by the Magistrate's Clerk: Did not put a label on "This contains sulphate of lime." Did not consider it necessary. When he kept the other preparation, *sulph. precip.*, his charge was the same as for *lac sulph.*, 2d. per two ounces.

Suppose you had been asked for precipitated sulphur, what would you have sold?

Witness: I should have sold nothing, because I don't keep it.

Suppose you had received a prescription containing the words *sulph. precip.*, how would you have made it up?

Witness: I must either have returned the prescription or sent to Liverpool or some other house to obtain it. I would not think of putting in an adulterated article.

Mr. Matthew Bell, manager for Messrs. Rimes & Co., wholesale druggists, said he had been in the trade 33 years. They sold *sulph. iodidum*, *sulph. lotum*, *sulph. lac*, *sulph. precip.*, *pur.* and *sulph. sublim.*, each as a distinct preparation, which had always been the case. *Lac sulph.* would contain sulphate of lime, which was inevitable for the process of preparation. *Sulph. precip.* was prepared by fusing hydrochloric acid instead of sulphuric acid.

Mr. Glaisyer: What would the product be from such a preparation?

Witness: By the use of hydrochloric acid it would be *sulph. precip.* pure; by the use of sulphuric acid it would be milk of sulphur.

What would *lac sulph.* prepared in that way contain?

Witness: Sulphate of lime.

In your trade do you sell the same quantities of each?

Witness: No; we sell much more of the milk of sulphur than we do of the other, about ten times as much. The milk of sulphur was obtained from Albright & Wilson, near Birmingham, who obtained a gold medal for its purity at the Exhibition. It is so stated on their invoices.

The Clerk ruled that was not evidence.

By the Clerk: *Lac sulph.* was cheaper than *sulph. precip.* Milk of sulphur sold at 5d. per lb., and the other was 8d. per lb.

Mr. Edward Evans, of the firm of Evans & Son, Liverpool, wholesale druggists, said *sulph. precip.* was manufactured in a different way from the other, *lac sulph.*, and his firm sold in 1874 about four tons of milk of sulphur to six cwt. of the pure sulphur. He had known instances of persons bringing back to shops *sulph. precip.*, as they would have the *lac sulph.*

Mr. Oliver Pemberton said he was a consulting surgeon residing at Birmingham, and had been in practice 30 years, was professor of surgery to the college there, and was also surgeon to the general hospital. He was aware that milk of sulphur contained sulphate of lime and the other, *sulph. precip.*, did not. He regarded the drugs as distinct, and had always so regarded them. Milk of sulphur had been in use, especially by surgeons, for a variety of distinct surgical maladies, in which its special action was supposed to be of peculiar advantage. These diseases were generally restricted to the lower bowels, and for which it was desirable to obtain a laxative of a reliable character that would not be likely to produce irritating diarrhoea, which in such diseases would be most injurious. Therefore it had been regarded by himself and other surgeons most desirable to make use of this very preparation called milk of sulphur,

because the presence of the sulphate of lime in it moderated its laxative properties. The use of the other drug would be calculated to produce irritating diarrhoea. He had never ordered *sulph. precip.* but once, and that was for a prescription to be dispensed in Paris. Thinking that a popular remedy like *lac sulph.* would not be known to the French chemist, witness prescribed "*sulph. precip., B.P.*" To prove his general correctness on the subject, he put in a prescription dated November 20, 1876, in which he had prescribed *lac sulph.* because he knew it contained sulphate of lime. He would continue to use it, and he hoped he would be able still to obtain it as an article sold in the shops, and he would advise those who had to practise the surgical part of his profession to make use of the same article as he had done.

Dr. Redwood was sworn, and in answer to Mr. Glaisyer said that he was professor of chemistry and pharmacy to the Pharmaceutical Society, and he had been so for more than 30 years. He was public analyst for the county of Middlesex and three large metropolitan districts. He had been president of the Society of English Analysts, and for ten years had been employed by the Medical Council as editor of the British Pharmacopœia. The Pharmacopœia produced had been prepared under his editorship. He was also author of works on materia medica and other subjects. He had given a good deal of thought and attention to the subject, and had been practically acquainted with pharmacy for something like 50 years. He differed from Dr. Bell materially. He did not consider the term *lac sulph.* and *sulph. precip.* synonymous at all. In the great majority of cases where the non-medical public used the terms two distinct articles were referred to. Milk of sulphur was principally employed by the non-medical public, and by that term they referred to sulphur containing lime. It was usually taken in water, with which it mixed easily and readily, whereas that which contained no sulphate of lime would not mix in the same way. Precipitated sulphur stuck to the glass, and refused to diffuse itself in water, and if an attempt were made to administer it in that simple manner it would either adhere to the glass or to the mouth and throat of the patient. [Here the learned professor illustrated his argument by mixing the two drugs in water, and explained the *modus operandi* to the Bench.] To administer *sulph. precip.* treacle or syrup would have to be resorted to, which was done either in that or flowers of sulphur, as in the old brimstone-and-treacle method. The milk of sulphur had peculiar advantages over the other, and these had led the public to give preference to *lac sulph.*, the old milk of sulphur, over the more modern precipitated sulphur. From 1721 to 1746 there were two processes given, to contain either sulphate of lime or not, and it was then called *lac sulph.*, milk of sulphur. Then, from 1746 until 1788, there was only one method of making it ordered by the London College of Physicians, and that was the method which yielded sulphur with sulphate of lime. The alternative method had then been omitted. As a proof that sulphate of lime had received the sanction of an authority he would state that it had received the sanction of the College of Physicians during a period of 67 years, during which time it was ordered in the London Pharmacopœia, and it had also during that period passed before two scientific committees. The committee in 1746 was the scientific committee that had the revision of the Pharmacopœia, and they then omitted the mode previously intended as an alternative method of making the article without sulphate of lime, and adopted the method of making it in which it was produced with sulphate of lime, precisely analogous to the article before the court. Milk of sulphur had not been mentioned in any of the Pharmacopœias under that name for more than a hundred years. He was proceeding to give examples of the omission of other drugs being omitted from the Pharmacopœia, but the Clerk said that was not the question at issue.

By the Clerk: Precipitated sulphur contained impurities of various kinds. It would be wrong to supply an article containing sulphate of lime under the name of precipitated sulphur.

The Clerk: And you say some parties of eminence, if milk of sulphur is asked for, would expect to receive precipitated sulphur?

Witness: There are some, but that I conceive is a mistake.

The Clerk: Is the term *lac sulph.* comprised in the last Pharmacopœia under the term *sulph. precip.*?

Witness: Certainly not.

The Clerk: Why is it not mentioned?

Witness: For the same reason that many other medicines, of which I was going to give you instances, have been omitted.

The Pharmacopœia does not include all medicines that are used. There are other medicines quite as extensively used which are not mentioned in the Pharmacopœia.

The Clerk: You have heard that *lac sulph.* is supplied as thirteen to one, and yet you say it is not named in the Pharmacopœia?

Witness: The Pharmacopœia orders medicines which are intended for use by physicians in their prescriptions. *Lac sulph.* is employed by the non-medical public as a domestic remedy.

The Clerk: Suppose a prescription were brought to you, and it said "*lac sulph.*;" what would you put in? Would you not put in *sulph. precip.*?

Witness: Certainly not. I would refer to the Pharmacopœia in which the term was used, and see what was intended.

The Clerk: But if you looked at your Pharmacopœia and saw in it the term *sulph. precip.* you might supply it, although *lac sulph.* was used in the prescription?

Witness: No, I would not, for this reason. In the Pharmacopœia as it stands at present *sulph. precip.* is that which is employed, and which every medical man, in writing his prescriptions, ought to be acquainted with, and if he used another term, *lac sulph.*, I would conclude he did not intend the preparation ordered now under the name of precipitated sulphur to be used, but that which was originally in the Pharmacopœia as containing sulphate of lime, and is still used.

The Clerk: Many eminent men would use pure sulphur if *lac sulph.* was put in a prescription?

Witness: No; I do not think they would, because the preparation containing sulphate of lime possesses an advantage over the other: first, that it mixes with water, whereas the other does not; second, that it is more free from taste than the other; and third, that it is more efficacious as a remedy. That last is a mere matter of opinion.

Mr. Glaisyer: In your opinion is milk of sulphur a proper drug to be kept and sold by chemists?

Witness: I prefer it myself, and I consider I have a right to apply for it, and so has the public at large. I know no better name than milk of sulphur to be applied to an article which contains sulphate of lime, while the term *precip. sulph.* is used by the Pharmacopœia to distinguish the other preparation.

The Clerk: Would you not put a label on to show what it consists of?

Witness: No; I see no reason for doing so; the public well understand it.

This was the case for the defence, and the magistrates retired to consider their decision. After an absence of three-quarters of an hour, the magistrates returned into court, and the chairman delivered judgment as follows:—Mr. Marshall, the Bench have carefully considered the weight of evidence placed before them this morning, and have decided in this case to convict on the ground that you did not supply the article that was asked and demanded. The penalty is £L., and the costs follow as a matter of course.

Mr. Glaisyer said he would consent to the same decision in the other cases, and gave notice of appeal.

The proceedings then terminated, the case having occupied three hours.

ATTEMPT TO MURDER BY A DRUGGIST.

ON December 19, at Woolwich Police Court, Thomas William Christian, 22, druggist, was charged on remand with wilfully attempting to poison his landlady, Susannah Bayley, at 6 Kingston Terrace, Charlton-uxth-Woolwich; first by mixing poison with her supper beer on the night of December 4, and next by attempting to force some noxious drug down her throat as she lay asleep in bed at 4 o'clock on the morning of the 5th. This case was referred to in our last. Mr. Brummel Smith again appeared for the prisoner. Mr. G. W. Wigner, public analyst, completed his evidence. The beer when he received it contained only 11·7 grains of prussic acid, an amount insufficient to cause the death of an adult person; but a large quantity must have evaporated by exposure in the pickle dish into which the liquid was thrown. He had made an experiment to prove this, and found that seven-eighths of the poison would evaporate by exposure for six hours. He had at first suspected the presence of some ingredient other than prussic acid, but had found only some drug, not poison, which he presumed had been used to adulterate the beer. The small phial supposed to have been taken into the bedroom by the prisoner had only two or three drops of prussic acid remaining in it, but there were evident traces of the poison having been spilled over the

complainant's night dress. The handkerchiefs found in the bedroom had also prussic acid upon them, and one of them appeared to have been wetted with it all over. All the handkerchiefs were heavily scented with some strong perfume. Inspector Phillips said there was no additional evidence. Mr. Brummel Smith said he should reserve his defence. Mr. Balguy committed the prisoner to Newgate for trial.

The trial came on at the Old Bailey, before Mr. Justice Hawkins, on the 10th inst. Mr. Charles Matthews appeared as counsel for the prosecution, and Mr. Fulton defended. The evidence already summarised was given in full. For the defence Mr. Fulton remarked on the prisoner's youth, and said that, though of an indolent disposition, with which he had come to be upbraided, there was no suggestion that he had any ill-feeling towards the prosecutrix or any of her family. The only possible motive for his conduct on the occasion, and that would be utterly inadequate in itself, was that she had told him he should never be her son-in-law. The evidence of identity on that particular night was not evidence on which the jury could rely, independently of other circumstances. Mr. Fulton dwelt on the reasons which might have induced the prisoner to enlist at that particular time, but which furnished no justification for contemplating a crime. He complained that on the occasion in question the police had not sufficiently cautioned the prisoner when he began voluntarily to make a statement to them on their apprehending him—a course, he said, on their part which was not consonant with the English law.

Mr. Justice Hawkins carefully summed up the evidence to the jury, and, having recapitulated all the attendant circumstances, left it for them to say whether or not there had been an attempt to administer prussic acid to Mrs. Bayley on the occasion in question; if so, was it made by the prisoner; and if so, with what intent?

The jury, after a few minutes' consultation, returned a verdict of "Guilty" of attempting to administer poison with intent to murder.

The prisoner was sentenced to eight years' penal servitude.

CHARGE OF FRAUDULENT BANKRUPTCY AGAINST A CHEMIST AND DRUGGIST.

HENRY APPLEBY, formerly chemist and druggist, Tottenham Court Road, London, was tried at the Central Criminal Court on January 8, for various offences under the Bankruptcy Act, the material allegation against him being that after becoming duly adjudicated a bankrupt he had fraudulently concealed a portion of his estate from the trustee appointed under his bankruptcy to manage his affairs, and that he had omitted to disclose certain matters that were important to the interests of his creditors.

The Solicitor-General, Mr. Besley, and Mr. Grain, conducted the prosecution; Mr. Montagu Williams appeared for the defendant.

The defendant, besides his business in Tottenham Court Road, had another of the same description in Mortimer Street, Cavendish Square. At the latter end of the year 1874 he was in pecuniary difficulties, and in December, 1875, he was adjudicated a bankrupt upon the petition of a Mr. William Baggs, a builder, who was a creditor to the amount of 100*l*. The case on the part of the prosecution was that the defendant had gone to Paris, and had set his creditors completely at defiance, and when at length he was compelled to make a disclosure of his affairs in the Court of Bankruptcy he concealed various particulars relating to debts and property to which he was entitled. It was also clearly made out that at the time when the prisoner was very much embarrassed and proceedings were being taken against him by creditors, he disposed of his furniture at an auction-room at a great sacrifice, and had also disposed of silver plate, so that when the creditors obtained judgment, and execution was issued, no property was available to satisfy these judgments.

The jury found the prisoner guilty.

The next day, the 9th, and most of the 10th inst., the same prisoner was indicted before the Recorder for other offences against the Debtors Act, and Joseph Brown was charged with aiding and abetting him in the commission of and conspiring with him to commit such offences.

The Solicitor-General (Sir Hardinge Giffard), Mr. Besley, and Mr. Grain conducted the prosecution for the trustee; Mr. Montagu Williams appeared for Appleby; and Mr. Serjeant Ballantine and Mr. Straight for Brown.

A large portion of the time was occupied in reading the lengthened cross-examination of the two defendants, taken before the Registrar in Bankruptcy. The substantial point upon which the whole matter turned was whether Appleby had properly returned Brown in his accounts as a creditor for 800*l*., holding security of the estimated value of 950*l*. Incidental to this was the further question whether an equitable mortgage, purporting to have been executed by Appleby to Brown upon November 6, 1874, was really executed upon that day or some weeks later. It seemed that Appleby was in want of money during the year 1874, and that upon the introduction of a man named Budgett, his brother-in-law, he made the acquaintance of Brown, and obtained various advances from him from time to time up to the month of November in that year. As security for that, he gave certain equitable charges upon his property and executed a bill of sale. The main question was whether the advances alleged by Brown and Appleby had really been made, and the case for the prosecution was that they were to a large amount fictitious, and that at the time Appleby returned Brown as a creditor for 800*l*., he in reality owed him only 141*l*., that being the sum the Registrar in the Bankruptcy Court had found to be due.

After the learned counsel for the defendants had addressed the jury for their several clients, and some witnesses had been called to Brown's character, the Recorder summed up, remarking upon the serious nature of the charge and warning the jury not to allow themselves to be affected by any decision that had been arrived at in the Bankruptcy Court. There Brown had had the affirmative cast upon him of making out his claim, but here, upon his trial for a criminal offence, it was for the prosecution to prove to the satisfaction of the jury that it was a fictitious and fraudulent one. The learned judge commented upon the mode in which the examinations had been conducted in the Court of Bankruptcy in terms of disapproval, and, in conclusion, reminded the jury that they must not act upon suspicion in a criminal case, but upon facts.

After a short retirement, the jury came into court, and acquitted both defendants. Appleby remained in custody on the indictment on which he was convicted on the 8th inst., and was afterwards sentenced to nine months' imprisonment with hard labour.

MEDICAL OPINION ON THE MILK OF SULPHUR CASE.

THE *Lancet* says:—When shall we have the last of the wrangles about milk of sulphur? Everyone knows that the article commonly sold as milk of sulphur always contains, and must, from the way in which it is prepared, contain sulphate of lime. It appears to be commonly preferred to the pure precipitated sulphur, and we confess we do not see any reason why it should not be sold if not misrepresented. Milk of sulphur does not mean pure sulphur, but a particular preparation, and we think the Runcorn magistrates were in error in deciding that a purchaser who went to a certain shop for milk of sulphur did not get what he asked for. If he wanted pure sulphur, he asked for the wrong article, which was not the fault of the tradesman. The man who wants bread and asks for cake cannot reasonably abuse his baker. Notice of appeal has been given in the Runcorn case, and we trust that a final decision in this not very important question will ere long be obtained.

The *British Medical Journal*, referring to some remarks in the *Pharmaceutical Journal*, observes that that journal continues to argue that the adulteration of "milk of sulphur" with 70 per cent. of sulphate of lime is a very venial offence; indeed, that, being an "old-established usage," it ought not to be considered an offence at all: and referring to a recent conviction of a chemist, it considers the present liability to prosecution to be "an unmitigated evil." If, however, it be true, as is suggested, that some persons prefer to mix plaster of Paris in such large proportions with sulphur before dosing themselves with it, it might still be as well that the two should be sold separately, and that individuals who have this peculiar fancy should indulge it consciously and voluntarily, and be permitted, or even invited, to mix the ingredients themselves. The medicinal properties of gypsum as an internal remedy are not highly appreciated by the medical profession, and we doubt whether the public have that passion for it which is alleged. If they have, they may as well take it *unadulterated with sulphur*.

Trade Notes.

"THE PET" is the well-found name of the latest feeding-bottle. It is made by Messrs. Bourne & Taylor, and is one of the best neck variety in white glass, got up to sell at a shilling.

CRAWSHAW'S ANILINE DYES (in crystals) are now supplied in penny, twopenny, threepenny, and sixpenny packets. The cheaper packets are supplied on cards very showily displaying the art of dyeing.

MR. H. BOLLMANN CONDY has had the happy idea of producing an antiseptic somewhat similar to his ozonised water, but in the form of an antiseptic aromatic vinegar. It is very pleasant for toilet use, and is sold at a cheap rate.

IT WILL be seen from our correspondence columns that Robinson's Corn and Wart Pencils, as now labelled, may be sold without the patent medicine stamp. Mr. Robinson supplies them a dozen on a card, got up in good style.

IT HAS been stated that the two stores of the Civil Service Supply Association in Long Acre and Queen Victoria Street took more than 70,000*l.* in cash over the counter during the week preceding Christmas.

MESSRS. E. A. PHILLIPS & Co., of 11 Great St. Helen's, are agents for a "Pure Chocolate Powder," manufactured by Messrs. F. Korff & Co., of Amsterdam. It is of very delicate flavour, and would be much esteemed by chocolate consumers. The label in white and gold is also noticeable.

"CLAGGIE" is the harmonious sound which Messrs. Jackson & Co., of Stockton-on-Tees, are ambitious to introduce into the English language. They tell us that to "clag" is a north country verb, which signifies to stick, to unite. Claggine is a sticker; in other words, a cement. It is clear, very powerful, and cheap, a good-sized bottle being sold for sixpence. We hope Messrs. Jackson will clag a good many customers.

GROUT'S PATENT FOOD WARMER.—This is an invention by Mr. Grout, of Hereford. It is an apparatus with spaces for two or three feeding bottles in the middle, the whole of the surrounding apparatus being a hollow vessel of tin. Boiling water is poured into the vessel, and the food in the bottle is cold when the bottle is placed in its receptacle. In less than an hour it becomes quite warm, and will keep so all the night. The apparatus is entirely covered with two thick folds of felt, and is got up with a view to convenience of handling, as well as sightliness. The present construction does not seem adapted for the bent-neck feeders, which is a drawback that there should not be much difficulty in conquering.

FAIRLIE'S "NEW" WINE.—Mr. Fairlie, of Glasgow, supplies a wine containing no alcohol whatever, but which is simply the pure juice of the grape. Mr. Fairlie imports the grapes from abroad, presses them by hydraulic machinery of special construction, and by steaming the juice in bottles to nearly the boiling point and corking while warm the product is a wine which will keep for any length of time without undergoing fermentation. Dr. Machattie, of Glasgow, and Dr. Stevenson Macadam, of Edinburgh, certify that the wine is entirely free from alcohol, and it may be, therefore, that it represents exactly the "new wine" of Scripture. It is sweet and rich in flavour, and, we have no doubt, is wholesome. It has been adopted in some churches, and, we should say, is well suited for chemists' sale. Containing no spirit, a license is of course unnecessary.

PETER MUMFORD & SON, flour and corn factors, intimate that they have removed into their new premises, Newcastle Granary and Steam Mills, Farringdon Road, E.C. This firm makes a speciality of crushed linseed. We have received a sample of their product, which is well worth notice. The crushing seems to have been effected with particular care, as the ground article is very clean and pure, and of excellent colour. No oil is extracted, nor is heat applied in their process. Their price, as quoted in their advertisement, seems to be moderate.

THE Cod Liver Oil Jelly first introduced by the late Mr. Agnew, of Liverpool, is now manufactured by Mr. H. J. Pratt, pharmaceutical chemist, of York, who has much improved it, and who presents a light-coloured, aromatic, flavoured jelly, by no means unpleasant and readily taken by young children. It is highly recommended by Dr. Thorowgood, of London, and other eminent authorities. Mr. Pratt publishes the following formula:—

| | Parts |
|----------------------|---------|
| Oil, Morrhue | 72.000 |
| Sacch. alb. | 16.840 |
| Acid citric | 0.600 |
| Gelatin | 2.760 |
| Aqua. | 7.560 |
| Oil, essent. | 0.200 |
| | 100.000 |

DR. SIEGLE'S Patent Steam Spray Inhaler is an invention of foreign origin, which has many noteworthy advantages. It consists of a small boiler containing water, and heated by a spirit lamp. The steam generated is forced through a glass pipe, which meets at the jet a smaller pipe issuing from a bottle containing whatever medicinal solution it is desired to atomise. The force of the steam sucks up the medicinal solution, and breaks it into a fine spray, which has the advantage of being steady, regular and warm. The apparatus has the additional advantage of being self-acting when once set going. Dr. Richardson has shown how with an instrument of this kind, and by combining iodine, peroxide of hydrogen and sea salt in the proper proportions, it is possible to bring the air of Scarborough to the inland invalid who cannot go thither. Messrs. Krohne & Sesemann, of Duke Street, Manchester Square, are the agents for this spray inhaler, and they have also got up in half-pint bottles the compound suggested by Dr. Richardson.

REVOLVING ADVERTISING LAMP.—We have lately seen the revolving lamp invented by Mr. A. Abrahams, of Elgin Road, Harrow Road, London. It is a most ingenious construction, and is very effective. It works by the action of currents of air on a fan at the top of the lamp, and is thus continuous in its action.



and by no means liable to get out of order. Its six sides of variously coloured glass might each have a different advertisement, for some of which perhaps the patent medicine makers might be willing to pay a small annual charge. Between a couple of specie jars such a lamp would, we think, be highly attractive.

Messrs. Ingram & Co., wine merchants and importers of natural mineral waters, of 119 Queen Victoria Street, announce that they have taken into partnership Mr. Henry William Royle, who has for many years acted as their manager. The style of the firm will not be altered.

* *

THE PATENT POCKET INHALER, brought under medical and general notice by the inventor and proprietor, Mr. James Battle Austin (at first under the alarming title of Aleximorhygiastikon), is a very useful little apparatus for the administration of inhalants. It consists essentially of a circle of tiny tubes of bibulous paper enclosed in a tubular vessel. By saturating these with the required inhalant one is able to apply the same to the mouth or nose, as may be necessary. Obviously the Pocket Inhaler is merely a scientific form of smelling bottle. With each inhaler is supplied a small bottle of carbolate of iodine, which is specially recommended in cases of asthma, catarrh, bronchitis, and disorders of the throat and lungs. The merit of Mr. Austin's invention seems to us to be that he has demonstrated that inhalation is not a process of mystery and wonder, but that all the necessary appointments can be carried about, ready charged, in the waistcoat pocket, and can be applied as well while walking down Cheapside as in an invalid's chair, with an array of doctors, nurses, and anxious friends to help. Mr. Austin would improve the neatness of the get-up of his article if the carbolate of iodine were contained in a stoppered bottle.

* *

RIMMEL'S VALENTINES.—Chemists who deal in perfumery may well add a few of Rimmel's beautiful valentines to their stock for the approaching festival of lovers. With elegance and artistic beauty Rimmel's valentines unite the most grateful perfume, a very appropriate adjunct to the language of sentiment. Among sixpenny and shilling valentines there are many admirably executed humorous designs. Especially we would mention the new comical hand-painted Silhouettes, which will be very popular. Of these, which sell at 1s. each, there are twelve subjects. There are also twelve varieties of Gents and Misses, a sixpenny sarcastic valentine very cleverly produced. Others at these and higher prices are suited for the expression of more serious ideas. The Love Telegrams, to sell at 6d., are excellent.



Among the more valuable valentines may be expressly mentioned the Italian, each of which contains a piece of Neapolitan, Florentine, or Genoese jewellery. Not less pleasing are the Caledonian and the Hibernian; the latter, with bog oak ornaments, are especially pretty. These vary from 5s. to 2 guineas. The Guinea Clock Valentine covers a miniature clock, which works perfectly. Fans, scent bottles, music rolls, and musical boxes are among the varieties of the stock. A catalogue of the whole would outweigh all the rest of our publication.

* *

BRUSSELS EXHIBITION, 1876.—Messrs. John Richardson & Co., of Leicester, have obtained the bronze medal and diploma of merit for the very handsome case of pharmaceutical preparations exhibited by them. Perhaps the following report, published in the Journal of the Royal Society of Pharmacy, Brussels, will best convey to our readers the opinion that our Belgian neighbours have formed of the high state of perfection Messrs. Richardson & Co. have attained in the manufacture of chemical and pharmaceutical products:—Extract from "the Analytical Report of the Royal Society of Pharmacy of Brussels upon the Brussels International Exhibition":—"Although in the United Kingdom chemists are not perhaps as a class in high repute from a scientific point of view, they are, nevertheless, excellent men of business. We came across, in the exhibition, the pharmaceutical products of the firm of John Richardson & Co., of Leicester, and must say that they are incomparably the finest we ever met with. We may as well mention at once that Messrs. Richardson are manufacturing chemists, who apply themselves to the manufacture of genuine pharmaceutical specialities, as well as simple chemical products. We compared the prices of their various products with those of French and Belgian manufacturers, and found the former comparatively less

expensive. Judged by the style of their preparation, and by their keeping qualities, nothing, as we have already said, could surpass them in beauty of external aspect or excellence of preservation. In general all the pills are transformed and have the appearance of white sugar balls. Our curiosity tempted us to cut several of them through in order to ascertain the state of the contents, and we found the whole of the central substance of the pills to be exceedingly homogeneous, by no means hardened, and exceedingly well preserved. The other preparations, such as syrup and vinegar of ipecacuanha, syrup of hydrate of chloral and croton chloral, syrup of iron phosphate, emulsion of cod liver oil, &c., were also in perfect condition. These were not quack medicines: every bottle indicated in a perfectly straightforward manner the name and the quantity of the substances entering into its composition as a medicine, without making the least mention of its qualities or its virtues." We observe, too, with pleasure that during his stay in Brussels Mr. J. G. F. Richardson was elected an honorary member of the Royal Society of Pharmacy, Brussels, as the following letter explains:—

The Royal Society of Pharmacy, Brussels.

Sir,—I have great pleasure in being able to announce to you that the Royal Society of Pharmacy has accepted your compact medicine chests, the beauty of which has been greatly admired. Moreover, influenced by the state of perfection reached by you in your pharmaceutical manipulation, the society has unanimously proclaimed you an honorary member. You will shortly receive the diploma which confers upon you this high distinction. I beg you to accept my most sincere congratulations, and the assurance of my highest feelings of esteem.

(Signed)

L. CRÉTEUR.
General Secretary.

To J. G. F. Richardson, Esq., Ph.D., F.C.S.



Young men, when your intended strikes at a croquet-ball, and hits her favourite corn, burst if you must, but do not laugh.—*Rome Sentinel*.

ST. LOUIS CITY has had an astonishing number of births this year. In fact, the doctors have been so busy in this line of business that only four deaths have occurred since April.

A MONUMENT is to be erected to Linnæus in Stockholm, and will be unveiled on January 10, 1878, the centenary of the great naturalist's death. The sum of 36,000 crowns has been collected.

A MAN falls on the street in a fit. As the doctor hastens up, a bystander exclaims: "Oh, if he had only come sooner!" But the doctor looks up from the fallen man and remarks: "He is dead; I myself could have done nothing more."

A DRUNKEN California miner has kicked a can of nitro-glycerine again, and his relations would feel a great deal better if they could find something more of him than one boot-strap. It seems ridiculous to have a funeral over only one boot-strap.

THE ADMINISTRATION OF SALICYLIC ACID.—Mr. J. W. White, of Clifton, states that if salicylic acid be beaten with $\frac{1}{10}$ th its weight of borax, and the same proportion of glycerine and tragacanth, an excellent pill mass is procured, of which 6 grains represent 5 of acid, and do not form an inconveniently large pill.

HARDENING CHILDREN.—A registrar of a parish in the West of Ireland states that the absurd custom still prevails with the peasantry of dipping infants in cold water to harden them, "and (he sarcastically remarks) so it does, for I registered two or three this quarter, killed, I am sure, by the same thing."—*Sanitary Record*.

A CALCULATING BOY.—A Yankee boy, on seeing a placard in a shop window, "Sugar-sticks five sticks for four cents," went in and calculated, "Five sticks for four cents, four sticks for three cents, three sticks for two cents, two sticks for one cent, one stick for nothing. I say, mister, hand us over one stick." The storekeeper "didn't see it."

A DRUGGIST says of the man who came in and borrowed his mortar, and forgot to return it, that "he's a pestle-lent fellow."

A GENTLEMAN surnamed the American Flagg, says the *San Francisco News-Letter*, who is stopping at the Palace Hotel, was the other day the victim of a fearful outrage. It seems this gentleman, who is tall, commonly wears the highest collar ever seen in 'Frisco. He received a note from a firm of bill-stickers, asking if he did not wish to let out the backs of those articles for advertising.

DR. RICHARDSON'S CITY OF HEALTH is in a forward state—as far as the designs go. These, we understand, have so admirably carried out the medical enthusiast's ideas that a dying fly, which fell upon them in the architect's office, recovered immediately. The statement that the Government intends passing an Act forbidding Government annuitants to reside there is contradicted.—*Fun.*

PRESERVATION OF A FAVOURITE MINISTER.—A minister was called in to see a man who was very ill. After finishing his visit, as he was leaving the house, he said to the man's wife, "My good woman, do you not go to any church at all?" "Oh yes, sir, we gang to the Barony Kirk." "Then why in the world did you send for me? Why didn't you send for Dr. Macleod?" "Na, na, sir, deed no; we wadna risk him. Do ye no ken it's a dangerous case o' typhus?"

"And is it really true that I shall recover?" asked a patient of his doctor. "Infallibly," answered the man of medicine, taking from his pocket a paper full of figures. "Here, look at the statistics of your case; you will find that one per cent. of those attacked with your malady are cured." "Well?" said the sick man in a dissatisfied manner. "Well, you are the hundredth person with this disease that I have had under my care, and the first ninety-nine are all dead."

At a most exclusive ball at the French sea-side, a young druggist's clerk approached one of the fairest and most aristocratic of the ladies, and humbly solicited the favour of a quadrille. The lady inspected him critically from his tie to his boots, and, taking her card, said, "I never, monsieur, dance with people whose names are not preceded by a 'de.' What shall I inscribe? Monsieur —?" "'Monsieur Peroxide de Manganese,' mademoiselle," he replied.

TO ESTIMATE CHICORY IN COFFEE.—Mr. Albert Smith, of 198 Essex Road London, sends to the *Chemical News* the following process for the estimation of chicory in coffee:—Take 5 grms. of the coffee and pour upon it about 25 c.c. of boiling water and filter; then pour it into a Nessler tube, and add acetate of lead, which will throw down the colouring matter of the coffee, but leave that of the chicory, which can then be estimated by comparing it with a standard of a known quantity of chicory.

HYGROSCOPIC PAPER.—The *Journal of the Franklin Institute* gives the following mode of preparing a useful hygroscopic paper:—A bibulous paper is impregnated with a concentrated solution of chloride of cobalt. It is very sensitive to atmospheric variations, being blue in a dry atmosphere, changing to red when the air becomes humid. Four observations a day, made for a year, with every precaution, prove that this paper may be employed to indicate readily and precisely the hygro-metric state of the air.—*Boston Journal of Chemistry.*

THE TEMPERATURE.—Messrs. Steward, opticians, of the Strand, have announced the following observations on the temperature of the air in London during a portion of the past month, as compared with that of June last. On June 10 the minimum temperature was 44°; on the 24th, 47°; and on seven other days of the same month, 49°, while on the 1st and 2nd of last month the lowest reading of the thermometer was 51°; and on the 28th, 50°. The rainfall also for December has been unusually heavy, the amount being over 6 inches.

In the British section of Machinery Hall at the Centennial Exhibition a cement exhibitor hung up some re-united broken chinaware, with enormous weights suspended from it, and introduced his display by means of a large signboard, having on it in gilt letters the ominous words:—"To the Queen, by special appointment." We are staunch advocates of economy in all departments of the public service, but we should feel a little patriotic shudder, if we were asked to tea at Windsor Castle, to see any of the cups and saucers with indications of the cement manufacturer's art about them.

It was a Frenchman—the famous Carlino—who, contentedly laying his head upon a large stone jar for a pillow, replied to one who inquired if it was not rather hard: "Not at all, for I have stuffed it with hay." It was an American lecturer who solemnly said one evening: "Parents, you may have children, or, if not, your daughters may have." It was a German orator who, warming with his subject, exclaimed: "There is no man, woman, or child in the house who has arrived at the age of fifty years but what has felt the truth thundering through their minds for centuries."

The following advertisement is by a modest specimen of "Young America":—"Wanted, situation, by a strong, active American youth of seventeen, with plenty of muscle, vim, and health. Not afraid to knuckle down to hard work of any kind; is well educated, and has a good knowledge of Latin. Ambition highly developed, and brains to back it. Penetration sharp as the business end of a hornet, and cheek bigger than either. Lawyer's office preferred. Highest and best of city references. Any one in search of such a bonanza will strike oil—a regular spouting well—by addressing 'Scamander,' D. A. Office."

GERMAN CHEMICAL SOCIETY.—At the annual meeting of the German Chemical Society, held at Berlin, December 22, the following officers were elected for the year 1877:—President, Professor F. Wöhler; Vice-presidents, Professors Kekulé, Baeyer, Hofmann, and Liebermann. The retiring president (Professor Hofmann) stated in his annual report that the present number of members was 1,598, showing an increase of 225 during the past year, and that 423 original scientific communications had been presented before the society during this time. The *Berichte* for 1876 form a volume of about 1,900 pages.—*Chemical News.*

IGNORANT POISONING.—Dr. Mackintosh, medical officer, reported to the rural sanitary authority of Chesterfield last week that the infant mortality for the fortnight was 55 per cent. The most glaring cause of this large mortality he asserted to be "ignorant poisoning," through administering soothing medicines containing opium, the frequent use of which became fatal. The working classes, he said, bought large quantities of these mixtures, and druggists made up poisonous prescriptions for the children to such an extent that many of the deaths registered "natural causes" were really chronic poisoning.—*British Medical Journal*, Dec. 23, 1876.

OIL OF CHINESE CINNAMON.—In order to detect adulterations of fixed oils, rosin oil, &c., Hager recommends to agitate it with an equal volume of petroleum-benzin. A turbid mixture is thus obtained, which after a few hours becomes clear. The above adulterations are soluble in this monstroom, while at a temperature of 5° to 10° none of the oil of cassia cinnamon is dissolved by petroleum-benzin, and not more than 2 per cent. of it at the ordinary temperature. When the pure oil is evaporated at about 240° to 250° C., it leaves a residue of from 35 to 40 per cent., consisting of oxidation-products and cinnamic acid. *Pharm. Centralhalle* and *Am. Jour. Pharm.*, June, 1875, p. 268.

HOMŒOPATHIC PIES.—The *Boston Traveller* tells the following on the authority of a truth-telling auctioneer of that city:—"A year or more ago the auctioneer had for sale a lot of homœopathic medicines. All these medicines were dumped into one pile and disposed of in one lot, there being various kinds of medicines in the mass. A boarding-house keeper bought the lot, and some days after the purchase the auctioneer asked her, 'What did you do with that homœopathic medicine, Mrs. —?' She replied, 'I thought I could use it, and it was cheap, and so I crushed it under the roller and then filled my sugar bowls with it. The boarders seemed to like it, and especially when powdered over pies.'"

LIMITED POWER OF THE MICROSCOPE.—Professor Abbe, of Jena, asserts, according to the *Revue Industrielle*, that the utmost power of the microscope employed in the examination of the structure of tissues and extremely minute objects has been very nearly attained. By carrying enlargement further, occasion is given to a play of light which may completely falsify observations. This remark applies especially to the examination of certain anatomical fibres. According to Professor Abbe, who has studied the matter carefully, it is impossible to distinguish details when they are so close that the first pencil of diffracted rays does not fall on the object at the same point as the cone of non-diffracted light.

REMEDY FOR BURNS.—The following is circulated in the *German medical journals*:—To 1 litre of cold water add 440 grammes of clear glue broken into small pieces. When well softened, transfer to a sand bath and dissolve. Add 60 grammes of glycerine and 22 grammes of carbolic acid. Then continue the evaporation until a brilliant pellicle forms itself on the surface of the mixture. When cold, the compound is an elastic mass, which can be liquefied by heat and applied to burns, covering them in less than two minutes with a brilliant, flexible and almost transparent surface, quite impermeable to the air. The same compound would probably be useful to apply to chilblains in any shape.

An American doctor thinks that the feeding bottle now so extensively employed "is an invention of which Herod might have been proud," and the *Medical Press* endorses his observation. The two dangers in connection with its use are the liability of the bottle, tube, or nipple, to become dirty, and the tendency of nurses to plug a crying baby's mouth with the feeder on all and sundry occasions, often when there is nothing in the bottle, when the irrational but contented little animal will patiently fill its stomach with wind, to the intense detriment of its digestive faculties. The latter difficulty is not for druggists' sundries men to deal with; but cannot some of them construct an apparatus of tube and teat which will admit of more perfect cleansing than those now in use?

The following statistics are given by the *Philadelphia Trade Journal*:—Brother Jonathan commenced business in 1776, with thirteen states and 815,615 square miles of territory, which was occupied by about 3,000,000 of civilised human beings. He now has a family of 43,000,000, who occupy 37 states and nine territories, which embrace over 3,000,000 of square miles. He has 73,000 miles of railroads, more than sufficient to reach twice and a-half round the globe. The value of his agricultural production is \$2,500,000,000, and his gold and silver mines are capable of producing \$100,000,000 a year. He has more than 1,000 cotton factories, 580 daily newspapers, 4,300 weekly, and 625 monthly publications. He has also many other things too notorious to mention.

NERVOUS COUGHING.—The celebrated Dr. Brown-Séquard once gave the following directions, which may prove serviceable to persons troubled with a nervous cough:—"Coughing can be stopped by pressing on the nerves of the lips in the neighbourhood of the nose. A pressure there may prevent a cough when it is beginning. Sneezing may be stopped by the same means. Pressing, also, in the neighbourhood of the ear may stop coughing. Pressing very hard on the top of the mouth inside is also a means of stopping coughing. And I may say the will has immense power, too. There was a French surgeon who used to say, whenever he entered the walls of his hospital, 'The first patient who coughs will be deprived of food to-day.' It was exceedingly rare that a patient coughed then."

SCIENTIFIC INFORMATION FOR LADIES.—In spite of all the efforts of the educational powers that be to spread scientific instruction amongst the people, the instances that daily crop up of the crass ignorance on matters of science, amongst even well-educated writers, are sufficiently amusing to the initiated. A wiseacre who has compiled the "Lady's Every-Day Book," describing castor oil, coolly informs us that "this very safe and common aperient is an oily substance secreted by the beaver. We obtain it both from Russia and America, but that obtained from the latter country is esteemed the best." We can fancy a fond mother trying to cram half an ounce of Russian castor oil, membranous bag and all, down her lovely infant's throat, under the impression that it was a "very safe aperient."—*Chemical News*.

SOLUBILITY OF SALICYLIC ACID.—The following is translated from the French:—

| | |
|--|------------------------|
| 1 gramme of salicylic acid will dissolve in .. | 5 cc. alcohol. |
| " " " " " " | " " " " " " |
| " " " " " " | 3-30 cc. ether. |
| " " " " " " | 300 cc. chloroform. |
| " " " " " " | 130 cc. boiling water. |
| " " " " " " | 1,000 cc. cold water. |
| 1 gramme of salicylic acid, with 0-45 gramme ammon. carb., will dissolve in 10 grammes of water. | |
| 1 gramme of salicylic acid, with 1-11 gramme sodæ carb., cryst., will dissolve in 10 grammes of water. | |
| 1 gramme of salicylic acid, with 0-80 gramme borate of soda, will dissolve in 10 grammes of water. | |
| 1 gramme of salicylic acid, with 1-06 gramme citric acid saturated by ammonia, will dissolve in 15 grammes of water. | |



[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, successor to L. de Fontainemoreau & Co., 4 South Street, Finsbury, London, and at Paris and Brussels.]

Provisional Protection for six months has been granted for the following:—

4026. T. Hyatt, of Gloucester Gardens, London. An improved chest protector for persons of weak lungs, the same being also applicable as a respirator and as a protector to other parts of the person. Dated October 18, 1876.
 4406. J. M. Richards, Great Russell Street Buildings. Improvements in valved nozzles for bottle stoppers. Dated November 14, 1876.
 4416. J. Wood, of Dumfries, North Britain. Improvements in taking impressions or casts of the mouth for use in making artificial teeth, and in apparatus for the same and other dental operations. Dated November 15, 1876.
 4418. G. W. von Nawrocki, of Berlin, Germany. Improvements in apparatus for the manufacture of concentrated sulphuric acid and other mineral acids. Dated November 15, 1876.
 4446. K. Knott, of 4 South Street, Finsbury, London. An improved method and apparatus for preserving animal and vegetable substances. Dated November 17, 1876.
 4482. T. Shaw and W. Blackburn, of Marsh, Yorkshire. A new or improved method of and apparatus for measuring and drawing off any given quantity of liquid from a vat, cask, or other vessel containing it in bulk. Dated November 20, 1876.
 4510. C. W. Batten, J. Griffin, and F. Prudencio, all of Bristol. Improvements in bottles for containing aerated liquids and in the mode or means of stoppering or closing such bottles. Dated November 21, 1876.
 4553. E. Schering, of Berlin, Germany. Improvements in the manufacture of salicylic acid, and in the apparatus employed therein. Dated November 24, 1876.
 4586. H. M. Whitehead, of Fenchurch Street, London. Improvements in preserving meat and in apparatus connected therewith. Dated November 27, 1876.
 4624. J. Harvey, of Upper Thames Street, London. Improvements in the means of preserving meat, fish, and analogous substances. Dated November 29, 1876.
 4654. J. S. Butler, of Percy Street, London. An improved process for treating vegetable fibres. Dated December 1, 1876.
 4655. J. S. Butler, of Percy Street, London. Improvements in the preparation of aniline dyes. Dated December 1, 1876.
 4696. G. Rydill, of Highgate, London. Improvements in dyeing hark shades of piece goods, woollen waste, hair, and rags, a light fast yellow or fawn colour; dyeing fast aniline blue and other colours; utilising the waste products for treating sewage and manure. Dated December 5, 1876.
 4721. E. Rambold, of Shadwell, London. Improvements in the mode and means for arresting, condensing, and purifying the noxious vapours arising from street sewers and such-like places. Dated December 6, 1876.
 4751. F. T. Bond, of Gloucester. Improvements in the production of sulphurous acid gas for medicinal, sanitary, and economic purposes, and in the appliances used therefor. Dated December 8, 1876.
 4791. A. M. Graham, of Plymouth, Devonshire. Improvements in obtaining fatty matters from sewage and other fluid and semi-fluid refuse containing such matters. Dated December 11, 1876.
 4839. C. Girard, E. Willm, and G. Bouchardat, all of Paris, France. Improved processes for obtaining colouring matters, or of processes for obtaining novel colouring matters. Dated December 11, 1876.
 4845. E. Spink, of York. Improved combination of ingredients or compounds for curative purposes. Dated December 11, 1876.
 4851. P. C. Bunn, of Stoke Ferry, Norfolk. Improvements in the production of pigments. Dated December 15, 1876.
- Letters Patent have been granted for the following:—
2620. G. I. J. Wells, of Widnes, Lancashire. Improvements in the manufacture of soda and potash. Dated June 24, 1876.
 2629. E. Collins, of Birmingham. Certain improvements in infants' feeding bottles. Dated June 26, 1876.
 2630. C. T. Kingzett, of Shaftesbury Terrace, Kensington, and M. Ziegler, of Buckland Terrace, Belsize, Park. Improvements in the preparation of blood albumen, and the application of the same for purposes of dyeing and printing on textile and other fabrics with colours, also applicable to sizing and enamelling wood, glass, and metal. Dated June 26, 1876.

2714. T. Rule, of Gilesgate, Durham. Improvements in apparatus for stoppering bottles for containing gaseous and aerated liquids. Dated July 1, 1876.
2737. J. Calderwood, of Addiewell Chemical Works, Midlothian, North Britain. Improvements in utilising sulphuric acid tar. Dated July 4, 1876.
2821. G. Tamm, of Highbury, London. Improvements in magnetic, electric and electro-magnetic apparatus or machines. Dated July 11, 1876.
3011. S. Gee, G. Gibbs, and P. J. Garnett, of Leeds. Improvements in apparatus for forming internal screw threads in the necks of bottles, jars, or other vessels. Dated July 26, 1876.
3095. J. W. Slater, of Tamworth Terrace, London. Improvements in deodorising and purifying sewage. Dated August 2, 1876.
3217. P. C. Scott, of Parklands, Hassocks Gate. Improvements in flasks, as regards the stoppering and stoppers for the same. Dated August 18, 1876.
3379. W. Weldon, of Abbey Lodge, Merton, Surrey. Improvements in lining furnaces to be used for the manufacture of sulphide of sodium and sulphide of potassium. Dated August 28, 1876.
3381. W. Weldon, of Abbey Lodge, Merton, Surrey. A new method of applying the heat necessary to enable carbonaceous matter to reduce sulphate of soda and sulphate of potash to the state of sulphide, partly applicable also to the manufacture of black ash. Dated August 28, 1876.
3520. H. W. Walker and T. L. Patterson, of Greenock, Renfrew, North Britain. Improvements in treating residual liquids obtained in manufacturing or refining sugar, and in apparatus therefor. Dated September 7, 1876.
3576. W. White, of Newcastle-under-Lyne, Staffordshire. Improvements in purifying or disinfecting sewage and other foul waters, and in the preparation of disinfectants. Dated September 12, 1876.
3731. J. B. Orr, of Glasgow. Improvements in the treatment of textile fabrics, printed or dyed with aniline black, in order to prevent what is known as greening. Dated September 25, 1876.
3843. J. J. Sachs, of New Barns, Barrow-in-Furness, Lancashire. An improved apparatus for use in treating animal and vegetable substances in order to facilitate the impregnation or the exhaustion thereof of aeriform or other fluid. Dated October 4, 1876.
3848. J. Maclear, of Glasgow. Improvements in utilising by-products of the soda and potash manufactures. Dated October 5, 1876.
3894. W. Young, A. Neilson, A. Young, of Clippens, Renfrew, North Britain. Improvements in the destructive distillation of bituminous substances, and in the apparatus or means employed therefor. Dated October 9, 1876.
3947. P. Wagner, of Percy Street, London. An improved process of treating vegetable fibres to impart to them a silky appearance. Dated October 12, 1876.
4069. H. W. Walker and T. L. Patterson, of Greenock, Renfrew, North Britain. Improvements in treating and utilising residual liquids obtained in manufacturing or refining sugar. Dated October 21, 1876.
4133. J. Cole, of the Caledonian Road, London. Improvements in the construction and arrangement of magnetic apparatus to be employed for curative and remedial purposes. Dated October 26, 1876.

Specifications published during the month :—

Postage 1d. each extra.
1876.

999. E. Solvay. Manufacture of carbonate of soda. 8d.
1865. A. Lloyd. Preparation of cuea or coca extract. 4d.
1236. T. Cook. Apparatus for compressing chlorides of soda, &c. 6d.
1335. A. W. Gillman and S. Spencer. Apparatus for bottling beer, &c. 6d.
1927. H. Deacon. Manufacture of chlorine. 4d.
1930. W. Clark. Treating sewage water. 4d.
1969. A. Robottom. Preserving animal and vegetable substances. 2d.



LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

Notices of first meetings of creditors have been issued in re the following estates. The dates are those of the "London Gazette" in which the notices first appeared.

- BETTEL, WILLIAM, junr., 2 Exchange Place, Middlesborough, and 10 Turner Street, Coatham, Yorkshire, analytical chemist. Nov. 30.
- BOWEN, JOHN HUGHES, 9 Prince of Wales Road, Kentish Town, and 91 Wigmore Street, Marylebone, chemist. Dec. 15.
- DAVIS, THOMAS HENRY, Darlington Street, Wolverhampton, analyst. Dec. 19.

- EVANS, JOHN, Gwernllwyn Cottage, Dowlais, Glamorganshire, surgeon. Dec. 19.
- HAHN, HENRY, trading as HAHN & Co., 27 Lombard Street, merchant, late Chiswick, soap manufacturer. Dec. 11.
- HILLYARD, EDWARD, Heckington, Lincolnshire, surgeon and apothecary. Dec. 14.
- HILLYARD, THOMAS, & ORTNER, ROBERT LEONARD, 67 Wigmore Street, Cavendish Square, surgical instrument manufacturers. Dec. 27.
- LAYDES, JOSEPH SAMUEL, 11 Warwick Square, Belgravia, 5 Bourne Street, Eastbourne, Sussex, M.D., and 7 Jermy Street, St. James', club proprietor. Dec. 11.
- PADLEY, GEORGE, Swansea, physician. Dec. 19.
- PICKLES, HENRY EMMANUEL, 2 Heaton Street, Blackburn, surgeon. Dec. 23.
- PIGOTT, WALTER GEORGE, Cromer, Norfolk, chemist. Dec. 12.
- RATHBONE, CHARLES ATKINSON, East Stonehouse, surgeon R.N. Dec. 5.
- ROUTLEDGE, GEORGE, Morpeth, Northumberland, chemist. Dec. 9.
- SKENE, WILLIAM, St. John's Terrace, Bucknurst Hill, doctor. Dec. 2.
- WARNER, GEORGE HENRY QUIBELL, Massingham, Lincolnshire, chemist. Dec. 18.

SCOTCH SEQUESTRATION.

MACINTOSH, THOMAS, Ardlach Chemical Works, near Nairn, manufacturing chemist. Dec. 14, with protection.

DIVIDENDS DECLARED.

- ALLEN, FREDERICK (Liq.), Holywell, Flintshire, chemist. Div. 20s., Roberts & Dickinson, sols., Chester.
- BURGH, JOHN A., Greenock, chemist, &c. 3rd and final, J. Wilson's, 59 St. Vincent Street, Glasgow, on and after Jan. 8.

PARTNERSHIPS DISSOLVED.

- BURKINSHAW & BENEKE, Edeusfield, Lancashire, chemists.
- HANSON & TOWNSEND, Liversedge, chemists.
- HUTCHINSON & CREGGER, Liverpool, surgeons.
- HUTCHINSON & HALSE, New Bridge Street, Blackfriars, surgeons.
- HUTHWAITE & LILL, Nottingham, surgeons.
- MALEHAM & MALEHAM, Sheffield, chemists.
- MAY & BAKER, Battersea, chemists.
- TOWNSEND, ROBERT, 121 Bishop Street, Port Dundas, Glasgow, manufacturing chemist. January 1. The business continued by Robert Townsend, jun., and Alexander W. Townsend.
- WALKER & PEARSON, Middlesborough, surgeons.

Obituary.

BARD.—November 18, 1876, Mr. Henry Bard, chemist and druggist, of St. Thomas, Exeter.

BRADBURY.—October 2, 1876, Mr. George Garmeson Bradbury, chemist and druggist, of Shavington, Nantwich. Aged 62 years.

BRIGHT.—December 16, 1876, Mr. Philip Bright, chemist and druggist, of Brecon.

CARRINGTON.—November 15, 1876, Mr. John Alexander Carrington, chemist and druggist, of Bakewell, Derbysire.

COOMBS.—November 30, 1876, Mr. William Morton Coombes, chemist and druggist, Old Kent Road.

DARBY.—November 27, 1876, Mr. Samuel Aldred Darby, chemist and druggist, of St. Botolph Street, Colchester.

FIRTH.—We regret to have to record the death of Mr. James Firth, who, having been associated with THE CHEMIST AND DRUGGIST for many years, was well known to many of our subscribers. Mr. Firth died in London on December 14, 1876, at the age of 44.

HARRIS.—December 2, 1876, Mr. Alfred Harris, chemist and druggist, of South Norwood. Aged 42 years.

HARTLEY.—December 13, 1876, Mr. Alfred Hartley, pharmaceutical chemist, of St. Stephen's Crescent, Kennington.

HAUGH.—October 24, 1876, Mr. Thomas Haugh, chemist and druggist, of Brampton, Cumberland. Aged 83 years.

HILL.—October 24, 1876, Mr. William Gardner Hill, pharmaceutical chemist, of George Street, Edinburgh. Aged 36 years.

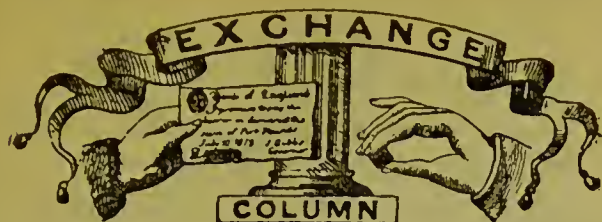
KERNICK.—November 25, 1876, Mr. Samuel Penrose Kernick, pharmaceutical chemist, of Duke Street, Cardiff.

READ.—November 22, 1876, Mr. James William Read, chemist and druggist, of Chelsea.

ROWNFREE.—October 14, 1876, Mr. John Rowntree, chemist and druggist, Copenhagen Street, Islington.

TAYLOR.—November 30, 1876, Mr. John William Taylor, pharmaceutical chemist, of Lincoln.

VINEY.—November 25, 1876, Mr. David Viney, chemist and druggist, of South Street, Teworth.



TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

A lot of bottles, specie jars, and fittings, at half Maw's price. 26/294.

Dental show-case, Spanish mahogany, neatly got up, cheap. 16/298.

Two excellent label drawers, nearly new, 10s., cost 17s. G. C. Giles, York Road, Leeds.

A pill machine, to cut 24; original cost 25s.; what offers? Russell, Chemist, Brentwood.

48 numbers of *The Chemist and Druggist*. Offers wanted. Wilby, 164 Belgrave Gate, Leicester.

A soda water and lemonade machine, second hand, by Barnett, price 35*l*. N. G. Wilcocks, Back Street, Bath.

Pindar's rotary pill making machine, to be sold cheap. Address, X9, Messrs. Deacon's, Leadenhall Street, E.C.

Lowest cash price for three 4-gal. pear-shaped carboys, cut glass stoppers. Edwd. Jas. Evans, Llanybyther.

Second-hand medicine chest, mahogany, 20 by 12 by 12, price 35*s*. Address, F. Stannard, Broad Green, Croydon.

The Chemist and Druggist for 12 months, week after publication. What offers? Diary, 1877; post free, 2*s*. 3*d*. 25/294.

Flatting mill, iron stand (Ash's), 4-inch multiplying wheels, little used, 8*l*.; small vulcaniser, 2 flasks complete, 30*s*. 22/294.

Pharmaceutical Journal for 1875-76, a few missing, also 70 odd copies, cheap; must be sold. Zeta, 151 Hoxton Street, London.

A 50*s*. Lipscombe filter, quite new, never been used, only fault top projection broken off; price 1*l*. 1*s*. Dispenser, Post Office, Droitwich.

The Chemist and Druggist and *Pharmaceutical Journal*, 1875-6, complete, and quantity of back numbers. What offers? Bygott, Huddersfield.

Straker's fac-simile printing process for copying letters, documents, &c., everything complete; new within the last month, cost 25*s*., price 19*s*. 22/90.

Morphine hydrochlor., 10*s*.; balsam sulphur, 5*s*.; Natal arrow-root, finest, 10½*d*., or exchange for shop rounds. Padwick, Red Hill.

Gray's "Anatomy," seventh edition (latest), quite new, published at 28*s*., price 18*s*., or will exchange. A. G., Fontainebleau Villa, Warwick Road, Ipswich.

Large powerful electric machine, with a quantity of sundries for experiments, also copper still. Messrs. Wilkinson & Co., Medical Hall, 4 Baker's Hill, Sheffield.

Three 1*s*. 1½*d*. Clarke's linctus (Davenport); three 9½*d*. Roper's plaster; two 1*s*. 1½*d*. Proctor's pills; two 1*s*. Smith's live long candy; three 1*s*. 1½*d*. Lambert's asthmatic balls; one 1*s*. 1½*d*. Hudson's pulmonic balsam; two 1*s*. 9*d*. Cupiss' horse balls; all clean and in good condition. 1*s*. 1½*d*. for 7½*d*., 2*s*. 9*d*. for 1*s*. 9*d*., 1*s*. 9*d*. for 1*s*., 1*s*. for 6*d*. Furnival, Chemist, Hanley.

A bent plate-glass counter case, 3 feet long, as Maw's 41, 3*l*. 10*s*., in first-class condition. Shirtliff, Chemist, &c., 115A Stoke Newington Road.

One of Southall Bros. & Dymond's materia medica cases, nearly new, cost 30*s*. net, will take 1*l*. for it; contains the additions to B.P. Apply, D. C. A., Post Office, Hereford.

A bell-metal mortar in perfect condition, weight 100 lbs.; also a marble mortar, perfect, 15 inches outside diameter, in square four-legged stand. What offers? Pullin, Leamington.

Dispensing bottles—8 gross 4-oz., 4th part; 4 gross ditto plain, at 8*s*. 6*d*.; 10 gross 6-oz., plain, at 9*s*. 6*d*.; 2 gross 12-oz., at 14*s*. Andrews, Chemist, Eastbourne.

Superb 18-carat gold watch by Cockburn, Edinburgh, full diamond jewelled, massive plain cases, and most reliable timekeeper; cost 35*l*., price 12*l*. R. Halford, Chemist, New John Street, Birmingham.

Offers wanted for *Pharmaceutical Journal*, from June, 1857, to June, 1876 (vol. 5, for 1862, missing); *The Chemist and Druggist* for 1874-5-6; *Journal of Dental Science* for 1874-5-6. Weston, Ventnor.

Published 10*s*. 6*d*., Tanner's "Index of Diseases," quite new, 1876 edition, 6*s*.; Royle's "Materia Medica," 5th edition, good condition, 6*s*.; some respirators and chest protectors, very cheap. Wing, Cbislehurst.

Scale beam (second-hand) to weigh up to 7 cwt., with 4½ cwt. of weights, price 4*l*.; shop stove (second hand), with 25½ feet of iron chimney, complete, cost 12*l*., price 4*l*. 10*s*. Apply to Mr. Jno. Kirbey, Chemist, Gibson Street, Newcastle.

Best quality mahogany bagatelle board, 5 feet, original price 2*l*. 2*s*., for 25*s*. cash, complete, and nearly as good as new; Spanish mahogany case for front of desk, 2 feet 8 by 2 feet 3, 24*s*. J. Floyd, Bury St. Edmunds.

Fifty ounces of Howard's quinine in 4-ounce bottles at 10*s*. per ounce; also 50 ounces of Jules Thomas & Co.'s in 25-ounce tins, at 9*s*. 9*d*. per ounce. James Watson, Rose Corner, King Street, Norwich.

Fourteen lbs. pot. iod. Ang opt., 7*s*. 3*d*. per lb.; 12 ozs. quinae sulphas (Howard's), 1-oz. bottles 10*s*. 3*d*.; Maw's abdominal belt, elastic web to lace, 27 inches by 34, 6*s*. 6*d*. J. Allen, Chemist, Plymouth.

1 gross syringes, in cases, 1*l*. 4*s*.; 6 dozen trusses, assorted, 12*s*. dozen; 6 dozen shilling sauce, 6*s*. dozen; 1 gross gilt caps, smells, 1*l*. 10*s*.; 1 gross 6*d*. Coleman's "Killer," 1*l*. 10*s*.; 6 dozen sample suspensory bandages, 6*s*. dozen. By letter only, J. Smith, 4 Lucretia Road, S.E.

For sale or exchange, owner not having time to use it, a very fine single Damascus barrel breechloading gun, double grip action, 12 bore, central fire, with rebounding lock, a sure killer (made to order); also patent re-capper and turn-over machine for refilling cartridges, and about 200 cartridges filled, cost 8*l*. 12*s*. State offers to Dr. Cooper, Bandon, Co. Cork.

Ten 4-lb., 6 2-lb., 32 ½-lb. gold-labelled, handsome blue opaque glass shop jars, 5*s*. 9*d*., 3*s*. 9*d*., 2*s*. each; wide and narrow mouth 3-pint bottles, 15*s*. dozen; quarts, 10*s*.; pints, 7*s*.; smaller, 6*s*.; 2 nests (14 each) mahogany-fronted drawers, new, 30*s*. each; nest (16 ditto), 34*s*. 6*d*.; show bottles, from 1 to 10 gallons; specie jars, various sizes; 200 shop jars, various sizes and colours; show cases, dispensing screens, window enclosures, and various other fittings; pomado and scent bottles; tooth, midwifery, and other instruments, medical books, some furniture, pictures, and prints; tobaccoists' fittings, &c. All cheap, to effect a clearance; also plate-glass front. 294 Old Kent Road, London.

Carriago paid.—Fowne's "Chemistry," tenth edition, quite new, 10*s*.; vols. 1-11 *Pharmaceutical Journal*, third series, half calf, cloth sides, 9*s*. vol.; Smith's "Pharmaceutical Guide," 4*s*. 6*d*.; Balfour's "Manual Botany," 8*s*. 6*d*.; ditto Bentley, 8*s*. 6*d*.; Fresenius' "Qualitative Analysis," 9*s*.; Sutton's "Volumetric Analysis," 8*s*.; Hoffman's "Chemistry," 3*s*.; Wilson's, 2*s*. 6*d*.; Macadam's "Practical," 1*s*. 6*d*.; Roscoe's "Chemistry," 3*s*.; Bloxam's "Laboratory Teaching," 3*s*. 6*d*.; "Year-Book of Pharmacy," 1872 to 1875, 4 vols., 1*l*. 1*s*.; all late editions, and nearly new. Fairbairn, 5 Keir Street, Edinburgh.

The *Pharmaceutical Journal*, 1st and 2nd series, with index to 1st, half-bound in calf, lettered and gilt, in capital condition, in all 30 vols.; also a large double oxy-hydrogen lantern, with 1½-in. condensors, floating gas-holders, large muslin screen, &c.; further particulars on application. 31/288.

2s. 6d. each, published prices given.—Craigie's "Pathological Anatomy," 16s.; Quain's "Anatomy," 18s.; Marcel's "Clinical Disorders," 18s.; Phillip's "Translation P. L., 1836," all synonyms given, 12s. 6d.; Gregory's "Organic and Inorganic Chemistry," 10s. 6d.; Gregory's "Handbook Organic Chemistry," 5s. 6d.; Celsus, 8 books, with translation, 10s.; Steggall's "Medical Manual," 10s.; Andral's "Pathological Anatomy," 26s. 6d.; Parnell's "Chemical Analysis," 9s.; Lindley's "Elements Botany," 12s.; Liebig's "Chemistry Food," 5s. 6d.; Liebig's "Agricultural Chemistry," 6s. 6d.; Guy's "Forensic Medicine," 10s. 6d.; Johnson's "Hydrography," 6s.; Turner's "Elements Chemistry," 30s.; Ellis' "Demonstrations Anatomy," 12s. 6d.; Cooper's "Surgery," 18s.; Walshe's "Diseases Heart," 12s. 6d.; Parkin's "Epidemic Diseases," 7s. 6d.; James' "Fire and Life Assurance Annuities," 15s. M. Percy, 12 James Street, Haymarket, S.W.

Fixtures in good condition for a druggist's shop, 35l., also for a chemist's shop at 20l.; 6 mahogany glass cases, 13 by 30, flat, 11s. each; 6 mahogany glass cases, 15 by 30, flat, 13s.; bont plate-glass case, with shelf at back and mirror, also, 9½ inches wide, 48 inches long, 55s.; 12 dozen female glass syringes, 2 oz., 3s. 6d. per gross, in any quantity; 3 good brass enemas, new, 3s. each; 1 mahogany case and desk, plate-glass front, 57s. 6d., good condition; 6 gross penny packets fuller's earth, 3s. 6d. per gross; 6 gross large leech bite teats, very good, any quantity sent, 7s. 6d. per gross, usual price 15s.; 6 gross small teats, 3s. gross; palette knives, 50 dozen, all sizes, 25 per cent. ordinary prices, sent in assorted dozens; 100 plaster irons at half price, a single one sold; 50 dozen assorted Webb catheters, 1s. 9d. per dozen; best wax dip, 3 mo. floats, per gross, 12s.; 100 specie jars; a 26-inch royal arms, 50s.; ditto, 18-inch, with beautiful sido, complete, 15s. to 17s. 6d. each, Phoenix and Seroll patterns. The foregoing prices will only be in force until the lots on hand are cleared off. Tomlinson, shopfitter, 15 St. Paul's Square, Birmingham.

Handsome mahogany dispensing counter, with plate-glass screens on top, in lengths, as follows:—4 ft. 2, 7 ft., 8 ft. 4, as Maw's 153 and Treble's 131; mahogany moulded top counters, with panelled fronts, carved trusses, &c., in lengths as follows:—3 ft. 6, 5 ft., 6 ft., 8 ft. 4, 8 ft. 7, 9 ft., 10 ft., 10 ft. 4, 11 ft., 12 ft., 15½ ft., 20 ft. all the above counters are finished off equal to new; also 14 ft. long handsome mahogany wall fitting, with shelves and cornice above, as Maw's 197, but with silvered plate-glass pilasters, mahogany drawers with gold labels, &c., lockers under; one 10 ft. long mahogany wall fitting, with shelves and cornice above; one 7 ft. 3 long, 14 in. deep, 3 ft. 6 high nest mahogany shop drawers with glass labels and knobs: 4 ft., 4 ft. 6, 6 ft., 12 ft., 14 ft. nests mahogany fronted gold labelled shop drawers, with lockers under; two handsome mahogany cigar cases; two handsome mahogany toothbrush cases; handsome upright plate-glass mahogany show case, with desk, as Treble's 76; 2 ft. long upright mahogany show case, as Maw's 39; two mahogany rail shop desks; 4 ft. 6 long mahogany shop desk with embossed glass screen; two mahogany nests book shelves; mahogany book case, with cupboard under; mahogany office book case, with cupboard under, fitted inside; handsome mahogany wall cases, with cupboards under, silvered plate-glass and mahogany pilasters, as Maw's 198, 199, 201, 202, 209; thirty upright, bent, flat mahogany show cases, all lengths; three Maw's soda water stands, Burrowes' soda water rack; two mahogany label chests, as 26 Maw's; 5 nests deal dovetailed drawers to go under counter; 45 pear-shape carboys, from 1 to 16 gallons; 22 specie jars with royal arms, &c.; 10 handsome glass show jars with gilt glass covers, as fig. D Maw's; 20 glass lozenge jars with cut glass knobs and gold labels, as figs. 1 and 2 Maw's; 30 glass show jars, as fig. A Maw's; 200 gross dispensing bottles, white vials, Lubin's ess. bottles, &c.; 12 gross glass syringes, all sizes, and various sundries, &c. Lloyd Rayner, 333 Kingsland Road, London, N.

15 doz. shop bottles, at 6s. 6d. per doz.; 12 black stock bottles, 1½ gal., stoppered and capped, 1s. 6d.; 12 green ditto, 1s. 3d.; 12 stone jars, labelled and japanned covers, 3 lbs., 1s. 3d.; several specie jars, gold covers, from 3l. per pair; 12 2-gal. carboys, 4s. 6d.; several larger sizes; 3 pairs French balance scales, 1 pair, fig. 922, agate balance, 21s.; 24 white ointment jars, 4 lbs., japanned covers, 1s. 3d. each; nest of drawers, 64, at 1s. 3d. per doz.; nest of cupboards, 24; several looking-glasses, very cheap; 3 doz 4 and 6-oz. ext. pots, 4s. per doz.; 6 each 3 and 4 lbs. new blue ointment jars, 32s. lot; several retorts; 24 jujube jars, cut knobs, labelled, new, 2s. 6d. each; 5-foot plate-glass counter case, Maw's 105, 6l. 10s.; 6-foot, as Maw's 99, 7l. 10s.; a 4-foot, as Maw's 101, 4l. 10s.; 2 Rimmel's perfume stands; a very superior sponge case, Maw's 92, 5l.; a very handsome desk and case, fig. 21; desk without case; a 5-foot dispensing screen, as fig. 161; 8-foot shop fixture, Maw's 211, 35l., all plate-glass; a very elaborate dispensing screen, case at each end, looking-glass centre, and marble slab in front, 8l. 10s.—a bargain; a case to stand on ground, 4 feet 6 long, marble top, 3 feet high, 5l.; an upright glass case, glass top, and front and sides, 3 feet high by 24 in. wide, 5l.; several tooth-brush cases; glass and other sundries, very cheap. Natali, 213 Old Street, City Road, E.C.

WANTED.

A set of drawers for under counter. 36/289.

Leg iron, left, for a child 5 years; double magneto electric machine. Marlur, Halstead.

The Chemist and Druggist for June and July, 1875. Sharp, Chemist, Sunderland.

About a dozen each of narrow-mouth and wide-mouth 32-oz. shop bottles. Balch, 25 Queen Street, Ramsgate.

Homeopathic counter case and medicines. Coldwell, 86 Queen's Road, Peckham.

Nest of drawers (containing a good number), suitable for a seedsman. Pattison, Chemist, Shrewsbury.

Long bent-glass cases, good condition; also glass lozenge jars. A. R. Awbery, Chemist, Henley-on-Thames.

Midland Illustrated News.—Title and index of volume ii., title and index of volume iii., and numbers 45 and 46, 1870. Say price. E. Taylor, Droitwich.

British Pharmacopœia; Besley's "Formulary," last editions; Squire's "Companion," 9th edition; state condition and price. J. J. E., 12 Fern Acre, Cneltenham, Manchester.

A second-hand student's microscope, by good maker; must have, at least, two achromatic object-glasses, ½ inch and ¼ inch, together with screw adjustments and case. 3/89.

The Chemist and Druggist, March, 1874; Journal Chemical Society, February, 1875; Sanitary Record, July 10, 1875; Pharmaceutical Journal, December 18, 1875, and January, 15, 1876; subscription price, or exchange for other numbers. Fletcher, Hampton.

ADDRESSES AND INFORMATION WANTED.

[Chemists able to give any information in reply to queries printed below are respectfully requested to communicate the same, addressing in the first instance to the reference figure given, "Care of the Publisher of THE CHEMIST AND DRUGGIST." Charge for insertions, 1d. per word.]

Charles Hyde, formerly assistant at Great Yarmouth. 13/276.

Rev. Charles Berry, supposed to be near Cannock Chase. 2/264.

Wanted, address of Dr. Major—left Canterbury two months since, stout, dark whiskers. 4/273.

Mrs. Wells, supposed to be about Manchester—very tall, has husband and son, uses Davis' Pain Killer. 6/296.

Mrs. Faulds, formerly of Harrogate, Leeds, and Scarborough. F. K. Rollitt, solicitor, rather deaf, connections in Hull, successful information rewarded. 34/265.

YESTERDAY, for the fifth time, F. J. Clarke, Esq., Bracebridge Hall, distributed to no less than 900 necessitous widows and aged spinsters resident in this city, quantities of coal, varying from two to four bags each, according to the circumstances of the individuals.—*Lincolnshire Chronicle*.



THE commercial history of the past year is about as dreary a record as any analyst has ever been called upon to scrutinise. At its opening everyone saw prospects of improvement. Two years was fixed as the longest period which depression could attain, and the laws of nature were now about to assert themselves in the promotion of industrial enterprise. Multifarious were the sources from which prosperity was to spring, and we all felt ourselves justified in basking in the anticipated sunshine. But it never came. The world's trade drooped constantly from January to December; all the great industries of this country show a record of stagnation positively melancholy; legitimate speculation holds off with burnt fingers, and the only cheerful ones are the Stock Exchange gamblers, who bet on bad times, and who stand to win on exhausted enterprise.

All this requires but little proving, and unfortunately it defies explanation. There are one or two facts which put the story more vividly than any description, and it is most heartily to be desired that the best heads among us will study them, for they suggest serious reflections for a commercial country like England. For one thing, it may be remarked that never before in the history of this country has the price of money ruled so low for so long a time. From April to December the Bank of England has quoted 2 per cent., an almost unheard of figure; but even that has been entirely unreal, for the price at which good paper has been discounted has actually varied from $\frac{1}{2}$ to $1\frac{1}{2}$ per cent. Another indication of the dearth of enterprise is that the Bank of England has had during the last nine months in her coffers more than two millions worth of bullion more than the value of her notes in circulation. Once more, the figures of the Board of Trade Returns in regard to the export trade are conclusive as to the dullness of our national commerce. Here are the totals for the past four years:—

| | £ |
|--------------|-------------|
| 1873 | 255,164,603 |
| 1874 | 239,558,121 |
| 1875 | 223,465,963 |
| 1876 | 200,575,856 |

Thus in four years the export trade of Great Britain has dropped by more than fifty million pounds, or to the extent of 20 per cent.! And this without anyone being able to assign a sufficiently obvious reason.

It is to be remarked at the same time that notwithstanding this regularly advancing diminution of our export trade, our imports have regularly increased. We touched upon this last month. The inference is that as yet the country, and consequently the retail trade, has not yet felt the depression. An increased importation means an increased consumption; it means that the country must be to that extent the poorer; but it also indicates that the country is wealthy enough to stand against the unprecedented depression without much suffering. The advance of our imports is, however, ominously stopping. In 1875 we progressed above 1874 by nearly four millions. In 1876 we only surpassed 1875 by some 60,000l.

There is no reassurance in the opening of the new year. But this period can never be a criterion. Taking stock and balancing occupies most of the attention of business men during the month we have just passed, and this year political affairs add immensely to the weight which necessarily checks affairs.

The changes we have to report during the month are few and unimportant. Chemicals, as a rule, are quiet but fairly firm. The recovery made by most of them since September is scarcely maintained in the absence of sufficient business, but it seems

pretty clear that there is now nothing in the hands of middle men to interfere with the regular course of supply and demand. Potash and its salts keep firm; soda is a shade easier. Of the chemicals affected by war preparations, saltpetre and quinine, the former has established a slight advance, the latter is steady at previous quotations. Cream of tartar and tartaric acid are a trifle cheaper than last month, as is citric, though it is now firm at 2s. 8d.

On the drug market transactions have not been extensive. China camphor is a shade easier; opium remains at its former price and is somewhat dull; castor oil has advanced nearly $\frac{1}{4}$ d. per lb., and cod liver oil has also made the anticipated move upwards. Of barks E. I. alone has shown activity, and this has been offered of excellent quality and has sold well, at higher prices than it has ever made previously. Ipecacuanha is in rather short supply, and has been bought for more money. Balsam of Copaiba has been bought in quantity in America, and is likely to keep its present rates at least, even if it does not make an advance, which is probable. Canada balsam is lower, and oil of cloves has turned in buyers' favour. Cochineal holds its advanced rates, and isinglass has also sold at slightly improved prices.

The market for oils has been lively. Most of them have advanced, especially olive, linseed, and rape. Olive is in marked demand, and any good oil is now worth 50% per tun. Messina has made 51l. The stock in London is very low, and as reports of the deficient crop are now confirmed, it is likely that olive will experience a considerable rise. Of rape and linseed oils it is sufficient to say that they have been bought freely, and now, after a slight reaction, stand firm at an advance averaging about 15s. over last month. Petroleum oil was competed for feverishly about the middle of last month, and touched 2s. 5 $\frac{1}{2}$ d. at one time, but since then, with occasional revivals, it has steadily fallen to 1s. 7d., which, under the circumstances, must be regarded as a low figure. Meanwhile, petroleum spirit has been inquired for, and at the close it is within 2d. of the oil. American turpentine has also been very brisk, and much speculation has occurred in this product. It has been run up in the month from 30s. to 36s., but is now a little easier, and stands at 34s. to 34s. 6d. The advance seems due to the fact that the French crop is a failure, and present quotations seem firm, the slight re-action being only the natural effect of realisation on the part of some speculators.

A READY METHOD OF TESTING URINE FOR ALBUMEN.—Take a piece of thin glass, such as is ordinarily used for microscopical covers; about one inch square is the best size. On the surface of this, slightly to one side of the centre, place about two drops of the urine to be tested; on the other side of the centre place one drop of nitric acid. By gently inclining the glass the two fluids will mix, and any precipitate that is formed will be readily seen when the acid fumes have passed off. The precipitate may be rendered more apparent by covering the reverse side of the glass with Brunswick black or some other such pigment. Another method of using the thin glass cover is one which will be found particularly handy for use at the bedside. The urine should be placed on the cover as above, and then with an ordinary pair of dresser's forceps the slip of glass should be held over the flame of a candle. By so doing the albumen, if present, will be precipitated, and rendered plainly visible by the blackening of the glass with the smoke of the candle. This last method should be practised with care, as, if the glass is held too close to the flame, violent ebullition of the urine takes place, with rapid evaporation. The value of the use of these thin glass covers for this purpose consists mainly in the ready way in which the urine can be tested by means of them. It is very easy to carry a few of them in the pocket-case for use by those who prefer the warm method of testing; whilst for those who prefer to test the urine cold with the acid a box could easily be contrived which would carry one or two blackened covers and some nitric acid.—W. Henry Kesteven, in the *Medical Times and Gazette*.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining Lane for articles sold in bulk. Our Retail subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

| 1877. | | 1876. | |
|---|--------------------------|--|-------|
| a. d. | a. d. | a. d. | a. d. |
| CHEMICALS. | | | |
| ACIDS— | | | |
| Acetic per lb. | 0 3 $\frac{1}{2}$ to 0 0 | 0 4 to 0 4 $\frac{1}{2}$ | |
| Citric " | 2 8 .. 0 0 | 2 10 $\frac{1}{2}$.. 2 11 | |
| Hydrochloric per cwt. | 5 0 .. 7 0 | 4 0 .. 7 0 | |
| Nitric per lb. | 0 4 $\frac{1}{2}$.. 0 0 | 0 5 .. 0 5 $\frac{1}{2}$ | |
| Oxalic " | 0 5 $\frac{1}{2}$.. 0 0 | 0 5 $\frac{1}{2}$.. 0 0 | |
| Sulphuric " | 0 0 $\frac{1}{2}$.. 0 0 | 0 0 $\frac{1}{2}$.. 0 1 | |
| Tartaric crystal. " | 1 6 $\frac{1}{2}$.. 1 7 | 1 6 .. 0 0 | |
| powdered " | 1 6 $\frac{1}{2}$.. 1 7 | 1 6 .. 0 0 | |
| ANTIMONY ore per ton | 240 0 .. 300 0 | 280 0 .. 300 0 | |
| crude per cwt. | 26 0 .. 38 0 | 27 0 .. 38 0 | |
| star " | 56 0 .. 0 0 | 59 0 .. 60 0 | |
| ARSENIC, lump " | 26 0 .. 26 6 | 27 6 .. 28 0 | |
| powder " | 10 0 .. 11 0 | 13 6 .. 13 9 | |
| BRIMSTONE, rough per ton | 120 0 .. 130 0 | 150 0 .. 0 0 | |
| roll per cwt. | 10 0 .. 0 0 | 10 0 .. 10 3 | |
| flour " | 13 6 .. 0 0 | 12 6 .. 15 0 | |
| IODINE, dry per oz. | 0 5 $\frac{1}{2}$.. 0 0 | 0 6 .. 0 6 $\frac{1}{2}$ | |
| IVORY BLACK, dry per cwt. | 8 6 .. 0 0 | 8 6 .. 0 0 | |
| MAGNESIA, calcined per lb. | 1 8 .. 0 0 | 1 6 .. 0 0 | |
| MERCURY per bottle | 165 0 .. 170 0 | 210 0 .. 0 0 | |
| MINIUM, red per cwt. | 23 3 .. 0 0 | 24 0 .. 25 6 | |
| orange " | 37 0 .. 0 0 | 37 0 .. 0 0 | |
| PRECIPITATE, red per lb. | 4 1 .. 0 0 | 5 3 .. 0 0 | |
| white " | 4 0 .. 0 0 | 5 2 .. 0 0 | |
| PRUSSIAN BLUE " | 0 0 .. 0 0 | 0 0 .. 0 0 | |
| SALTS— | | | |
| Alum per ton | 145 0 .. 150 0 | 147 6 .. 155 0 | |
| powder " | 157 6 .. 160 0 | 165 0 .. 0 0 | |
| Ammonia : | | | |
| Carbonate per lb. | 0 5 .. 0 5 $\frac{1}{2}$ | 0 5 .. 0 5 $\frac{1}{2}$ | |
| Hydrochlorate, crude, white per ton | 560 0 .. 670 0 | 570 0 .. 650 0 | |
| British (see Sal Am.) | | | |
| Sulphate per ton | 370 0 .. 380 0 | 365 0 .. 370 0 | |
| Argol, Cape per cwt. | 80 0 .. 91 0 | 85 0 .. 96 0 | |
| Red " | 65 0 .. 75 0 | 71 0 .. 95 0 | |
| Opport, red " | 33 0 .. 33 6 | 33 6 .. 34 0 | |
| Sicily " | 0 0 .. 62 0 | 60 0 .. 62 6 | |
| Ashes (see Potash and Soda) | | | |
| Bleaching powd. per cwt. | 8 0 .. 0 0 | 7 9 .. 0 0 | |
| Borax, crude " | 27 0 .. 40 0 | 30 0 .. 50 0 | |
| British refined " | 41 0 .. 42 0 | 53 0 .. 0 0 | |
| Calomel per lb. | 3 8 .. 0 0 | 4 9 .. 0 0 | |
| Copper : | | | |
| Sulphate per cwt. | 22 0 .. 22 6 | 21 6 .. 25 0 | |
| Copperas, green per ton | 55 0 .. 60 0 | 65 0 .. 0 0 | |
| Corrosive Sublimat. p. lb. | 3 1 .. 0 0 | 4 1 .. 0 0 | |
| Cr. Tartar, French, p. cwt. | 110 0 .. 111 0 | 109 0 .. 110 0 | |
| brown " | 95 0 .. 0 0 | 92 6 .. 0 0 | |
| Epsom Salts per cwt. | 5 3 .. 7 0 | 5 3 .. 6 6 | |
| Glauber Salts " | 4 6 .. 5 6 | 4 6 .. 5 6 | |
| Lime : | | | |
| Acetate, white, per cwt. | 11 0 .. 20 0 | 11 0 .. 20 0 | |
| Magnesia : Carbonate " | 45 0 .. 0 0 | 42 6 .. 0 0 | |
| Potash : | | | |
| Bichromate per lb. | 0 4 $\frac{1}{2}$.. 0 0 | 0 4 $\frac{1}{2}$.. 0 5 $\frac{1}{2}$ | |
| Carbonate : | | | |
| Potashes, Canada, 1st sort per cwt. | 26 0 .. 0 0 | 28 0 .. 28 6 | |
| Pearlshes, Canada, 1st sort per cwt. | 34 0 .. 0 0 | 33 6 .. 0 0 | |
| Chlorate per lb. | 0 9 $\frac{1}{2}$.. 0 0 | 0 9 .. 0 0 | |
| Prussiate " | 1 0 .. 1 0 $\frac{1}{2}$ | 1 0 .. 0 0 | |
| red " | 2 1 .. 2 2 | 3 2 .. 3 3 | |
| Tartrate (see Argol and Cream of Tartar) | | | |
| Potassium : | | | |
| Chloride per cwt. | 0 0 .. 0 0 | 7 0 .. 0 0 | |
| Iodide per lb. | 7 9 .. 8 0 | 8 6 .. 9 0 | |
| Quinine : | | | |
| Sulphate, British, in bottles per oz. | 11 0 .. 0 0 | 6 6 .. 6 9 | |
| Sulphate, French " | 10 0 .. 0 0 | 6 2 .. 0 0 | |
| Sal Acetos per lb. | 0 7 $\frac{1}{2}$.. 0 8 | 0 8 .. 0 8 $\frac{1}{2}$ | |
| Sal Ammoniac, Brit. cwt. | 44 0 .. 45 0 | 44 0 .. 45 0 | |
| Saltpetre : | | | |
| Bengal, 6 per cent. or under per cwt. | 20 6 .. 21 0 | 19 0 .. 19 6 | |
| Bengal, over 6 per cent. per cwt. | 19 4 .. 20 6 | 18 0 .. 18 9 | |
| British refined " | 21 0 .. 22 6 | 22 0 .. 23 6 | |
| Soda : Bicarbonate, p. cwt. | 11 9 .. 12 0 | 11 0 .. 0 0 | |
| Carbonate : | | | |
| Soda Ash per bag. | 0 2 .. 0 0 | 0 1 $\frac{1}{2}$.. 0 0 | |
| Soda Crystals per ton | 85 0 .. 0 0 | 82 6 .. 0 0 | |
| Hypo-sulphate, per cwt. | 0 0 .. 0 0 | 0 0 .. 0 0 | |
| Nitrate per cwt. | 12 6 .. 0 0 | 11 6 .. 0 0 | |
| SUGAR OF LEAD, White cwt. | 37 0 .. 38 0 | 40 0 .. 0 0 | |
| SUGAR OF LEAD, Brown, cwt. | 27 0 .. 0 0 | 27 0 .. 0 0 | |
| SULPHUR (see Brimstone) | | | |

| 1877. | | 1876. | |
|--|--|--|-------|
| a. d. | a. d. | a. d. | a. d. |
| DRUGS. | | | |
| VERDIGRIS per lb. | 1 1 to 1 5 | 1 1 to 1 5 | |
| VERMILION, English " | 3 2 .. 0 0 | 3 6 .. 4 0 | |
| China " | 3 0 .. 3 1 | 5 6 .. 0 0 | |
| ALOE, Hepatic per cwt. | | | |
| 60 0 .. 160 0 | | 60 0 .. 160 0 | |
| Socotrine " | 65 0 .. 180 0 | 65 0 .. 200 0 | |
| Cape, good " | 50 0 .. 51 0 | 36 0 .. 39 0 | |
| Inferior " | 44 0 .. 49 0 | 30 0 .. 35 0 | |
| Barbadoes " | 55 0 .. 190 0 | 45 0 .. 210 0 | |
| AMBERGRIS, grey oz. | 60 0 .. 75 0 | 40 0 .. 55 0 | |
| BALSAM— | | | |
| Canada per lb. | 1 1 $\frac{1}{2}$.. 0 0 | 1 0 .. 0 0 | |
| Capivi " | 1 10 .. 2 0 | 0 0 .. 0 0 | |
| Pern " | 5 3 .. 0 0 | 0 0 .. 0 0 | |
| Tolu " | 11 0 .. 12 0 | 0 0 .. 0 0 | |
| BARKS— | | | |
| Cinchona alba per cwt. | 20 0 .. 24 6 | 16 0 .. 27 0 | |
| Cascarilla " | 16 0 .. 21 0 | 18 0 .. 22 6 | |
| Peru, crown & grey per lb. | 1 3 .. 3 1 | 1 0 .. 3 0 | |
| Calisaya, flat " | 2 6 .. 5 0 | 2 6 .. 4 0 | |
| quill " | 2 9 .. 5 0 | 2 6 .. 4 0 | |
| Carthagen " | 2 5 .. 3 7 | 0 8 .. 2 3 | |
| Columbian " | 2 0 .. 5 3 | 1 0 .. 2 10 | |
| E. I. " | 2 0 .. 6 4 | 1 0 .. 4 7 | |
| Pitayo " | 0 10 .. 2 4 | 0 6 .. 1 9 | |
| Red " | 2 0 .. 4 6 | 1 0 .. 4 6 | |
| Buchu Leaves " | 0 1 .. 1 1 | 0 1 $\frac{1}{2}$.. 1 1 | |
| CAMPHOR, China per cwt. | 77 6 .. 87 6 | 66 0 .. 70 0 | |
| Japan " | 87 0 .. 89 0 | 72 6 .. 0 0 | |
| Refin. Eng. per lb. | 1 3 .. 0 0 | 1 0 $\frac{1}{2}$.. 1 1 | |
| CANTHARIDES " | 2 8 .. 3 6 | 3 6 .. 5 0 | |
| CHAMOMILE FLOWERS p. cwt. | 45 0 .. 200 0 | 35 0 .. 60 0 | |
| CASTOREUM per lb. | 9 0 .. 30 0 | 6 0 .. 26 0 | |
| DRAGON'S BLOOD, Ip. p. cwt. | 140 0 .. 260 0 | 130 0 .. 200 0 | |
| FRUITS AND SEEDS (see also Seeds and Spices). | | | |
| Anise, China Star per cwt. | 85 0 .. 105 0 | 112 0 .. 115 0 | |
| Spanish, &c. " | 28 0 .. 40 0 | 30 0 .. 35 6 | |
| Beans, Touquin per lb. | 1 7 .. 2 7 | 1 6 .. 3 6 | |
| Cardamoms, Malabar good " | 3 9 .. 4 2 | 4 3 .. 5 11 | |
| inferior " | 0 10 .. 3 8 | 1 0 .. 3 9 | |
| Madras " | 1 11 .. 3 5 | 3 0 .. 4 0 | |
| Ceylon " | 4 6 .. 5 0 | 6 0 .. 6 8 | |
| Cassia Fistula per cwt. | 10 0 .. 32 0 | 7 0 .. 13 0 | |
| Castor Seeds " | 5 0 .. 10 6 | 10 0 .. 10 6 | |
| Cocculus Indicus " | 9 0 .. 11 0 | 13 6 .. 16 0 | |
| Colocyth, apple per lb. | 0 6 .. 0 11 | 0 6 .. 0 11 | |
| Croton Seeds per cwt. | 35 6 .. 36 6 | 36 0 .. 38 0 | |
| Cubeba " | 30 0 .. 0 0 | 24 0 .. 26 0 | |
| Cumin " | 18 0 .. 30 0 | 23 0 .. 26 0 | |
| Dividivi " | 10 0 .. 15 0 | 11 0 .. 15 0 | |
| Fenugreek " | 9 0 .. 12 0 | 12 0 .. 16 0 | |
| Guinea Grains " | 20 0 .. 0 0 | 23 0 .. 24 0 | |
| Juniper Berries " | 8 0 .. 10 0 | 10 0 .. 11 6 | |
| Nux Vomica " | 9 0 .. 13 0 | 7 0 .. 12 6 | |
| Tamarinds, East India, West India " | 10 0 .. 15 6 | 18 0 .. 24 0 | |
| Vanilla, large per lb. | 26 0 .. 40 0 | 10 0 .. 16 0 | |
| inferior " | 13 0 .. 20 0 | 60 0 .. 71 0 | |
| GINGER, Preserved, per lb. | 0 5 .. 0 6 $\frac{1}{2}$ | 0 7 .. 0 9 $\frac{1}{2}$ | |
| HONEY, Chili per cwt. | 40 0 .. 47 6 | 47 0 .. 60 0 | |
| Jamaica " | 35 0 .. 47 0 | 45 0 .. 53 0 | |
| Australian " | 0 0 .. 0 0 | 45 0 .. 62 0 | |
| IPERCACUANHA per lb. | 4 2 .. 4 11 | 4 0 .. 4 6 | |
| ISINGLASS, Brazil " | 2 6 .. 4 10 | 2 3 .. 4 9 | |
| Tongue sort " | 3 0 .. 5 2 | 2 8 .. 5 2 | |
| East India " | 2 0 .. 4 9 | 1 3 .. 4 10 | |
| West India " | 4 0 .. 4 7 | 4 1 .. 4 9 | |
| Russ. long staple " | 9 0 .. 12 6 | 13 0 .. 16 0 | |
| inferior " | 0 0 .. 0 0 | 0 0 .. 0 0 | |
| Simovia " | 2 0 .. 3 3 | 3 0 .. 4 0 | |
| JALAP, good " | 0 8 .. 0 9 | 0 7 .. 0 8 | |
| infer. & stems " | 0 7 .. 0 7 $\frac{1}{2}$ | 0 6 .. 0 6 $\frac{1}{2}$ | |
| LEMON JUICE per degree | 0 1 .. 0 1 $\frac{1}{2}$ | 0 1 $\frac{1}{2}$.. 0 2 | |
| LIME JUICE per gall. | 1 3 .. 1 8 | 1 6 .. 2 0 | |
| LIQUORICE, Spanish per cwt. | 0 0 .. 0 0 | 37 0 .. 90 0 | |
| Liquorice Root " | 12 0 .. 30 0 | 16 0 .. 30 0 | |
| MANNA, flaky per lb. | 5 6 .. 6 0 | 5 6 .. 6 0 | |
| small " | 1 6 .. 1 9 | 1 6 .. 1 9 | |
| MUSK, Pod per oz. | 15 0 .. 50 0 | 17 0 .. 50 0 | |
| Grain " | 35 0 .. 60 0 | 47 0 .. 61 0 | |
| OILS (see also separate list) | | | |
| Almond, expressed per lb. | 1 3 .. 0 0 | 1 2 .. 0 0 | |
| Castor, 1st pale " | 0 4 $\frac{1}{2}$.. 0 5 $\frac{1}{2}$ | 0 4 $\frac{1}{2}$.. 0 4 $\frac{1}{2}$ | |
| second " | 0 4 $\frac{1}{2}$.. 0 4 $\frac{1}{2}$ | 0 3 $\frac{1}{2}$.. 0 4 | |
| Cod Liver per gall. | 6 6 .. 8 6 | 4 0 .. 6 6 | |
| Croton per oz. | 0 2 $\frac{1}{2}$.. 0 0 | 0 2 $\frac{1}{2}$.. 0 0 | |
| Essential Oils: | | | |
| Almond per lb. | 20 0 .. 0 0 | 24 0 .. 25 0 | |
| Anise-seed " | 6 9 .. 6 10 | 8 6 .. 9 0 | |
| Bay per cwt. | 0 0 .. 0 0 | 65 0 .. 70 0 | |
| Bergamot per lb. | 10 0 .. 15 0 | 10 0 .. 21 0 | |
| Cajeput per bottle | 2 9 .. 3 0 | 2 4 .. 2 10 | |
| Caraway per lb. | 9 0 .. 9 3 | 9 0 .. 0 0 | |
| Cassia " | 3 9 .. 3 10 | 3 11 .. 4 0 | |
| Cinnamon per oz. | 2 6 .. 6 6 | 1 0 .. 6 6 | |
| Cinnamon-leaf " | 0 2 .. 0 4 | 0 2 .. 0 3 $\frac{1}{2}$ | |
| Citronelle " | 0 2 .. 0 0 | 0 1 $\frac{1}{2}$.. 0 2 | |
| Clove per lb. | 8 6 .. 0 0 | 10 0 .. 10 3 | |
| Juniper " | 0 0 .. 0 0 | 0 0 .. 0 0 | |
| Lavender per lb. | 1 8 .. 7 0 | 0 0 .. 0 0 | |
| Lemon " | 7 0 .. 9 6 | 7 0 .. 11 0 | |
| Lemongrass per oz. | 0 2 $\frac{1}{2}$.. 0 0 | 0 2 $\frac{1}{2}$.. 0 3 | |

1877.

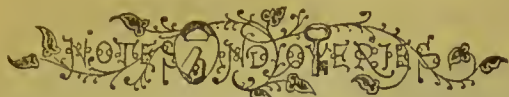
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| Essential Oils, continued:— | | s. d. | s. d. | s. d. | s. d. |
|-------------------------------------|----------|-------|-------|-------|-------|
| Neroli | " | 2 0 | 6 6 | 0 4 | 3 0 |
| Nutmeg | " | 0 7 | 0 7½ | 0 7 | 0 0 |
| Orange | per lb. | 6 0 | 9 0 | 6 0 | 9 0 |
| Octo of Roses | per oz. | 13 0 | 25 0 | 13 0 | 25 0 |
| Patchouli | " | 2 0 | 3 6 | 2 0 | 3 6 |
| Peppermint: | | | | | |
| American | per lb. | 12 6 | 14 9 | 16 0 | 16 9 |
| English | " | 34 0 | 35 0 | 32 0 | 34 0 |
| Rosemary | " | 2 0 | 2 6 | 1 4 | 1 10 |
| Sassafras | " | 2 3 | 2 6 | 2 3 | 2 6 |
| Spear-mint | " | 14 0 | 16 0 | 12 0 | 19 0 |
| Thyme | " | 0 0 | 0 0 | 1 9 | 2 0 |
| Mace, expressed | per oz. | 0 6 | 0 10 | 0 7½ | 0 10 |
| Opium, Turkey | per lb. | 24 0 | 25 0 | 19 0 | 21 6 |
| inferior | " | 10 0 | 18 0 | 12 6 | 13 6 |
| QUASSIA (bitter wood) | per ton | 100 0 | 140 0 | 100 0 | 210 0 |
| RHUBARB, China, good and fine | per lb. | 3 2 | 4 5 | 3 10 | 4 8 |
| Good, mid. to ord. | " | 0 8 | 2 11 | 0 8 | 3 4 |
| Dutch Trimmed | " | 0 0 | 0 0 | 0 0 | 0 0 |
| ROOTS—Calumba | per cwt. | 18 0 | 26 0 | 22 0 | 27 0 |
| China | " | 22 0 | 24 0 | 19 0 | 24 0 |
| Chiretta | " | 0 3 | 0 4 | 0 4 | 0 6 |
| Galangal | " | 19 0 | 22 0 | 19 0 | 24 0 |
| Gentian | " | 23 0 | 24 0 | 22 0 | 23 0 |
| Hellebore | " | 0 0 | 0 0 | 0 0 | 0 0 |
| Orris | " | 26 0 | 75 0 | 26 0 | 75 0 |
| Pellitory | " | 70 0 | 76 0 | 38 0 | 39 0 |
| Pink | per lb. | 0 0 | 0 0 | 0 10 | 1 3 |
| Rhatany | " | 0 4 | 1 0 | 0 4 | 0 10 |
| Seneca | " | 3 6 | 3 9 | 3 5 | 4 0 |
| Snake | " | 0 6 | 0 6½ | 0 10 | 1 0 |
| SAFFRON, Spanish | " | 33 0 | 37 0 | 0 0 | 0 0 |
| SALEP | per cwt. | 0 0 | 0 0 | 0 0 | 0 0 |
| SARSAPARILLA, Lima | per lb. | 0 5 | 0 7 | 0 0 | 0 0 |
| Guayaquil | " | 1 9 | 2 0 | 0 0 | 0 0 |
| Honduras | " | 1 1 | 1 6 | 1 3 | 1 11 |
| Jamaica | " | 1 9 | 3 0 | 1 6 | 2 10 |
| SASSAFRAS | per cwt. | 0 0 | 0 0 | 0 0 | 0 0 |
| SCAMMONY, Virgin | per lb. | 24 0 | 30 0 | 25 0 | 36 0 |
| second & ordinary | " | 6 0 | 22 0 | 7 0 | 24 0 |
| SENNA, Bombay | " | 0 1 | 0 4 | 0 1 | 0 4 |
| Tinnivelly | " | 0 2½ | 2 0 | 0 1 | 0 10 |
| Alexandria | " | 0 5 | 2 8 | 0 7 | 2 6 |
| SPEARMINT, refined | " | 1 4 | 0 0 | 1 4 | 0 0 |
| American | " | 1 0 | 1 2 | 1 1 | 0 0 |
| SQUILLS | " | 0 2 | 0 3 | 0 3 | 0 5 |
| GUMS. | | £ s. | £ s. | £ s. | £ s. |
| AMMONIAC drop | per cwt. | 2 2 | 2 10 | 2 5 | 2 10 |
| lump | " | 1 0 | 1 14 | 1 6 | 1 10 |
| ANDRI, fine washed | " | 11 0 | 12 0 | 11 10 | 13 0 |
| bold scraped | " | 9 10 | 10 10 | 9 10 | 10 10 |
| sorts | " | 6 10 | 9 5 | 7 0 | 9 0 |
| dark | " | 4 0 | 6 10 | 4 10 | 8 0 |
| ARABIC, E.I., fine | | | | | |
| pale picked | " | 3 0 | 4 0 | 3 5 | 3 15 |
| sorts, mid. to fin. | " | 2 10 | 2 19 | 1 8 | 3 2½ |
| garblings | " | 1 1 | 2 9 | 0 19 | 1 15 |
| TERRE, pick. gd. to fin. | " | 6 10 | 10 15 | 6 0 | 9 0 |
| second & inf. | " | 3 0 | 6 10 | 2 10 | 5 10 |
| in sorts | " | 2 5 | 3 5 | 1 10 | 1 15 |
| Geldu | " | 1 6 | 1 10 | 1 1 | 1 3 |
| BARBARY, white | " | 2 4 | 2 8 | 1 10 | 1 15 |
| brown | " | 1 14 | 1 18 | 1 9 | 1 16 |
| AUSTRALIAN | " | 2 5 | 2 12 | 1 17 | 2 6 |
| ASAFETIDA, em. to fin. | " | 0 18 | 2 11 | 0 18 | 1 16 |
| BENJAMIN, 1st & 2nd | " | 27 0 | 45 0 | 10 0 | 30 0 |
| Sumatra 1st & 2nd | " | 6 5 | 15 0 | 7 10 | 12 0 |
| 3rd | " | 3 10 | 5 5 | 4 0 | 5 0 |
| COPAL, Angola red | " | 6 0 | 6 15 | 6 0 | 6 15 |
| Benguela | " | 4 0 | 5 0 | 4 0 | 5 0 |
| Sierra Leone, per lb. | s. d. | 0 6 | 0 11 | 0 8 | 0 11 |
| Manilla | per cwt. | 15 0 | 27 0 | 20 6 | 31 0 |
| DAMMAR, pale | " | 66 0 | 68 0 | 58 0 | 61 6 |
| Singapore | " | 65 0 | 67 6 | 53 0 | 61 0 |
| EUPHORBIA | " | 9 0 | 15 0 | 12 0 | 20 0 |
| GALBANUM | per lb. | 0 5 | 1 3 | 1 0 | 1 6 |
| GAMBAGE, pkd. pipe | per cwt. | 220 0 | 275 0 | 180 0 | 240 0 |
| GUAIACUM | per lb. | 1 3 | 3 0 | 0 6 | 2 0 |
| KINO | per cwt. | 40 0 | 50 0 | 50 0 | 80 0 |
| KOWIE, rough | " | 20 0 | 45 0 | 35 0 | 53 0 |
| scraped sorts | " | 47 0 | 69 0 | 54 0 | 70 0 |
| Mastic, picked | per lb. | 4 0 | 5 0 | 4 0 | 5 0 |
| MYRRH, gd. & fine | per cwt. | 150 0 | 200 0 | 172 6 | 200 0 |
| ord. to fair | " | 90 0 | 150 0 | 61 0 | 172 0 |
| OLIBANUM, p. drop | " | 65 0 | 75 0 | 57 0 | 68 0 |
| amber & ylw. | " | 39 0 | 60 0 | 53 0 | 56 0 |
| garblings | " | 15 0 | 30 0 | 23 6 | 30 0 |
| SENEGAL | " | 3 0 | 3 5 | 2 10 | 2 15 |
| SANDARAC | " | 95 0 | 110 0 | 85 0 | 100 0 |
| SHELLAC, Orange | " | 100 0 | 160 0 | 120 0 | 200 0 |
| Liver | " | 95 0 | 115 0 | 112 6 | 160 0 |
| THUS | " | 20 0 | 21 6 | 20 0 | 22 0 |
| TRAGACANTH, leaf | " | 240 0 | 400 0 | 300 0 | 390 0 |
| in sorts | " | 25 0 | 175 0 | 25 0 | 175 0 |
| OILS. | | £ s. | £ s. | £ s. | £ s. |
| SEAL, pale | per tun | 34 10 | 0 0 | 34 10 | 0 0 |
| yellow to tinged | " | 32 0 | 34 0 | 31 0 | 34 0 |
| brown | " | 31 0 | 31 10 | 29 10 | 30 0 |
| BPERM | " | 88 0 | 90 0 | 93 0 | 100 0 |
| Body | " | 0 0 | 0 0 | 0 0 | 0 0 |
| Cod | " | 41 0 | 0 0 | 44 10 | 45 0 |

| Oils, continued:— | | £ s. | £ s. | £ s. | £ s. | |
|---------------------------------|-------|------|-------|-------|------|-------|
| WHALE, South Sea, pale, per tun | 35 0 | to | 0 0 | 34 10 | to | 35 0 |
| yellow | 32 0 | .. | 34 10 | 32 0 | .. | 34 0 |
| brown | 30 0 | .. | 0 0 | 29 0 | .. | 30 0 |
| East India, Fish | 28 10 | .. | 0 0 | 23 0 | .. | 0 0 |
| OLIVE, Gallipoli ...per ton | 51 0 | .. | 51 0 | 0 0 | .. | 0 0 |
| Gloja | 50 0 | .. | 0 0 | 47 0 | .. | 0 0 |
| Levant | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Mogador | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Spanish | 0 0 | .. | 0 0 | 43 10 | .. | 0 0 |
| Sicily | 49 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| OCCOANUT, Cochin .. | 41 0 | .. | 0 0 | 41 10 | .. | 42 0 |
| Ceylon | 37 15 | .. | 38 0 | 38 10 | .. | 39 0 |
| Sydney | 31 0 | .. | 37 0 | 32 0 | .. | 0 0 |
| GROUND NUT AND GINGELLY: | | | | | | |
| Bombay | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| Madras | 40 0 | .. | 41 0 | 34 0 | .. | 0 0 |
| PALM, fine | 40 0 | .. | 40 10 | 39 10 | .. | 0 0 |
| LINSEED | 26 15 | .. | 0 0 | 24 10 | .. | 0 0 |
| RAPESEED, English, pale .. | 41 10 | .. | 41 15 | 38 0 | .. | 38 10 |
| brown | 39 10 | .. | 39 15 | 36 10 | .. | 0 0 |
| Foreign, pale .. | 41 10 | .. | 42 0 | 38 0 | .. | 39 0 |
| brown | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| COTTONSEED | 32 0 | .. | 0 0 | 27 10 | .. | 0 0 |
| LARD | 61 0 | .. | 0 0 | 64 0 | .. | 0 0 |
| TALLOW | 31 0 | .. | 46 0 | 30 0 | .. | 54 0 |
| s. d. s. d. s. d. s. d. | | | | | | |
| TURPENTINE, American, cks. | 31 0 | .. | 31 6 | 25 9 | .. | 0 0 |
| French | 0 0 | .. | 0 0 | 25 2 | .. | 0 0 |
| PETROLEUM, Crude | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| refined, per gall. | 1 7 | .. | 0 0 | 0 11½ | .. | 10 0 |
| Spirit | 1 5 | .. | 1 6 | 0 10½ | .. | 0 11 |
| SEEDS. | | | | | | |
| CANARY.....per qr. | 67 0 | .. | 75 0 | 210 0 | .. | 0 0 |
| CARAWAY, English per cwt. | 44 0 | .. | 45 0 | 41 0 | .. | 0 0 |
| German, &c.... | 0 0 | .. | 0 0 | 0 0 | .. | 0 0 |
| CORIANDER | 12 0 | .. | 21 0 | 12 0 | .. | 18 0 |
| HEMP.....per qr. | 40 0 | .. | 45 0 | 36 0 | .. | 38 0 |
| LINSEED, English per qr. | 61 0 | .. | 66 0 | 60 0 | .. | 64 0 |
| Black Sea & Azof .. | 52 0 | .. | 0 0 | 53 0 | .. | 0 0 |
| Calcutta | 52 6 | .. | 0 0 | 52 6 | .. | 0 0 |
| Bombay | 54 0 | .. | 0 0 | 53 6 | .. | 54 0 |
| St. Petersburg .. | 52 0 | .. | 53 0 | 0 0 | .. | 0 0 |
| Mustard, brown...per bush. | 12 0 | .. | 15 0 | 0 0 | .. | 0 0 |
| white | 13 0 | .. | 16 0 | 10 0 | .. | 13 0 |
| POPPY, East India, per qr. | 51 0 | .. | 0 0 | 53 0 | .. | 53 6 |
| SPICES. | | | | | | |
| CASSIA LIGNEA ..per cwt. | 56 0 | .. | 65 0 | 53 0 | .. | 70 0 |
| Vera | 22 0 | .. | 45 0 | 22 0 | .. | 44 0 |
| Buds | 75 0 | .. | 80 0 | 95 0 | .. | 105 0 |
| CINNAMON, Ceylon: | | | | | | |
| 1st quality.....per lb. | 1 10 | .. | 3 7 | 2 3 | .. | 3 9 |
| 2nd do. | 1 7 | .. | 2 9 | 2 0 | .. | 2 11 |
| 3rd do. | 1 5 | .. | 2 6 | 1 11 | .. | 2 6 |
| Tellicherry | 2 9 | .. | 3 0 | 0 0 | .. | 0 0 |
| CLOVES, Penang | 2 5 | .. | 2 6 | 2 1 | .. | 2 2 |
| Amboyna | 1 7 | .. | 1 9 | 1 6 | .. | 1 7 |
| Zanzibar | 0 11½ | .. | 1 1½ | 1 3 | .. | 1 4 |
| GINOER, Jam., fine per cwt. | 91 0 | .. | 202 6 | 103 0 | .. | 102 6 |
| Ord. to good | 54 0 | .. | 90 0 | 62 0 | .. | 95 0 |
| African | 34 0 | .. | 35 0 | 46 0 | .. | 47 0 |
| Bengal | 32 0 | .. | 33 0 | 41 0 | .. | 43 0 |
| Malabar | 0 0 | .. | 0 0 | 40 0 | .. | 45 0 |
| Cochin | 50 0 | .. | 115 0 | 65 0 | .. | 120 0 |
| PEPPER, Blk., Malabar, per lb. | 0 4½ | .. | 0 5½ | 0 5½ | .. | 0 5½ |
| Singapore | 0 4½ | .. | 0 0 | 0 5½ | .. | 0 0 |
| White Tellicherry .. | 0 10 | .. | 1 4 | 0 10 | .. | 1 4 |
| Cayenne | 2 0 | .. | 3 0 | 3 0 | .. | 3 4 |
| MACE, 1st quality .. | 2 3 | .. | 3 3 | 2 4 | .. | 3 3 |
| 2nd and inferior .. | 1 0 | .. | 2 2 | 1 1 | .. | 2 3 |
| NUTMEOS, 78 to 60 to lb. | 3 10 | .. | 4 9 | 3 5 | .. | 4 2 |
| 90 to 80 | 3 2 | .. | 3 8 | 2 11 | .. | 3 4 |
| 132 to 95 | 2 3 | .. | 3 1 | 2 6 | .. | 3 0 |
| PIMENTA | 0 4 | .. | 0 4½ | 0 3½ | .. | 0 4 |
| VARIOUS PRODUCTS. | | | | | | |
| COCHINEAL— | | | | | | |
| Honduras, black ..per lb. | 2 10 | .. | 3 2 | 1 10 | .. | 2 5 |
| silver | 2 6 | .. | 2 8 | 1 7 | .. | 1 10 |
| pasty | 2 5 | .. | 0 0 | 1 6 | .. | 0 0 |
| Mexican, black | 2 7 | .. | 2 10 | 1 8 | .. | 1 10 |
| silver | 2 7 | .. | 0 0 | 1 7 | .. | 1 8 |
| Teneriffe, black .. | 2 11 | .. | 3 9 | 1 9 | .. | 2 10 |
| silver | 2 8 | .. | 2 10 | 1 8 | .. | 1 11 |
| SOAP, Castile.....per cwt. | 26 0 | .. | 33 0 | 33 0 | .. | 34 0 |
| SOY, China | 1 8 | .. | 1 9 | 3 2 | .. | 0 0 |
| SPONGE, Turk. fin. pkd. per lb. | 0 0 | .. | 0 0 | 12 0 | .. | 16 0 |
| Fair to good | 0 0 | .. | 0 0 | 4 0 | .. | 11 0 |
| Ordinary | 0 0 | .. | 0 0 | 1 0 | .. | 3 0 |
| Bahama | 0 0 | .. | 0 0 | 0 6 | .. | 3 0 |
| TERRA JAPONICA— | | | | | | |
| Gambier | 20 3 | .. | 0 0 | 26 9 | .. | 0 0 |
| Free cubes | 34 0 | .. | 36 0 | 39 0 | .. | 40 0 |
| Cutch | 25 6 | .. | 26 0 | 26 0 | .. | 24 0 |
| WOOD, Dry, Bar | £3 5 | .. | £3 10 | £1 0 | .. | 0 0 |
| Brazil | 0 0 | .. | 0 0 | 6 0 | .. | 24 0 |
| Cam | 18 0 | .. | 35 0 | 0 0 | .. | 0 0 |
| Paste, Cuba | 8 10 | .. | 9 0 | 9 0 | .. | 9 10 |
| Jamaica | 5 0 | .. | 5 5 | 6 10 | .. | 7 0 |
| Logwood, Campeachy.. | 9 10 | .. | 10 0 | 11 0 | .. | 12 0 |
| Honduras | 6 5 | .. | 6 15 | 8 0 | .. | 9 0 |
| St. Domingo | 5 10 | .. | 6 10 | 7 0 | .. | 7 15 |
| Jamaica | 5 10 | .. | 5 15 | 6 10 | .. | 7 0 |
| LIMA, first pile | 8 10 | .. | 9 10 | 9 10 | .. | 11 0 |
| RED SANDERS | 6 5 | .. | 6 10 | 7 5 | .. | 0 0 |



Only a Minor sends us a label of "Distilled Lime Water," bearing the superscription of a "pharmaceutical chemist by examination" at Manchester. Our correspondent says, "Even in these days of scientific advancement one is scarcely prepared for such a remarkable discovery," and he thinks the instance parallel to that of another pharmaceutical chemist, w.o., he says, "Made liq. calcis triplex by putting 6 ozs. calcis hydras to a gallon and diluting at the time of sale."

R. H. M. asks whether a man holding the assistant's certificate of the Apothecaries' Society can legally keep open shop for dispensing physicians' prescriptions and for the sale of poisons. He mentions such a case. The proprietor describes himself as "Certified Dispenser of Medicine, by examination, Apothecaries' Hall, London." Our correspondent says the Pharmaceutical Society has been written to, and the reply is neither a direct yes or no. We do not see any ground on which an examined assistant of the Apothecaries' Society can claim exemption from the effect of the Pharmacy Act. A legally qualified apothecary is not affected by that Act, but this person is not such. No doubt he may keep a shop open, describing himself in the manner stated, and he may sell therein anything except the poisons named in the schedule.

A. B. C.—Croton chloral is not such a very recent discovery. It is prepared by passing chlorine gas through acetic aldehyd. Liebreich says it has a specific action on the fifth nerve, and it has, therefore, been prescribed in facial neuralgia. An excellent paper on the subject by Mr. A. H. Mason, F.C.S., appeared in THE CHEMIST AND DRUGGIST for February, 1874.

Esperanza (Brazil).—The subjoined formula will give you a sauce somewhat similar to what you want:—

| | | | | | |
|---------------------------------|----|----|----|----|------------|
| White vinegar | .. | .. | .. | .. | 15 gallons |
| Walnut ketchup | .. | .. | .. | .. | 10 " |
| Mushroom ketchup | .. | .. | .. | .. | 10 " |
| Madeira wine | .. | .. | .. | .. | 5 " |
| Table salt | .. | .. | .. | .. | 25 lbs. |
| China soy | .. | .. | .. | .. | 4 gallons |
| Allspice and coriander, of each | .. | .. | .. | .. | 1 lb. |
| Mace and cinnamon, of each | .. | .. | .. | .. | ½ lb. |
| Assafetida | .. | .. | .. | .. | ½ lb. |

Dissolved in 1 gallon of brandy. Boil 20 lbs. of hog's liver for 12 hours with 10 gallons of water, renewing the water from time to time. Boil down. Chop the liver and work 5 gallons of water with it through a sieve.

A Remarkable Dispensing Business.—A correspondent has cut for us from a prescription the mark of a Birmingham chemist, whose register appears to have reached to No. 4,353,361 B., which, as Truthful James observes, "is coming it strong."

Trade Marks.—A mere word as a trade mark is not now accepted for registration if it is new, but Mr. A. E. Tanner, of Liverpool, writes to us referring to a question on the subject in these columns a few months ago, telling us that he has been able to register the word "Bromodyne," by reason of his having used it before the passing of the Act. He was merely required to make a declaration to that effect before a magistrate. The whole proceedings connected with the registration cost 4l., and for that sum the property is secure for 14 years.

Court Plaster.—Dissolve 5ss. of benzoin in f3vi. of rectified spirit; in a separate vessel dissolve 3i. of isinglass in water; strain each and mix. Allow to subside, warm the clear part and apply 10 or 12 coats to stretched silk, and when dry finish off with a solution of 3iv. of Chio turpentine in fvi. of tinct. benzoin, to prevent cracking.—*American Druggists' Circular.*

Gratia.—We cannot help you in the matter of depilatories. You say you have tried the ordinary compounds of lime, barium, arsenic, &c., and found them ineffectual. Fire and sword are all we know of after these. Try again. The compounds should only be made into a paste just before applying. Respecting carbolic sheep dip, we have not any formula at hand. Messrs. Calvert & Co., Bradford, Manchester, make a compound for this purpose, and, we should think, can supply you cheaper than you could make it.

E. J. S.—(1) Goodall, Derby. (2) Francis, Rochford. We cannot speak as to the usefulness of the little printing presses. You had better see and judge for yourself.

H. W. T.—Every work professing to teach chemistry explains the laws of chemical affinity. Perhaps Roscoe's "Science Primer of Chemistry" (Macmillan, 1s.) would suit you as well as any.

W. D. S.—There is no English journal directly connected with the glass, china, and earthenware business.

Condiment.—The cattle foods you refer to, we presume, are mainly oatmeal, with aromatics, such as caraway, coriander, cinnamon, anise &c., pimento, ginger, and liquorice powders in various proportions. These serve well as mild stimulants. Obviously we cannot give you the makers' private formulae.

Ignoramus would like to have a formula for coating pills giving a result similar to Cox's Brighton pills. Mr. Cox, or any other gentleman, is invited to reply.

Tegil will be glad to be informed by what means the subjoined can be preserved in proper shape, and free from deliquescence:—B. Aloes, Gum mastic, iodide of potassium, 5a 3j., made into 40 pills.

A New Test Colour.—The flowers of the violet and iris have recently been found to yield a very fine blue colour, which is a more delicate test for acids and alkalis than the solution of litmus commonly employed. The name of the new colour is phyllocyanin. It will probably before long find its way into all chemical laboratories.

S. P.—The following are Vanec's formulae for antibilious or aperient pills:—

| | | | | | |
|-----------------|----|----|----|----|------------|
| Ext. coloc. eo. | .. | .. | .. | .. | 80 grains. |
| Scammony | .. | .. | .. | .. | 20 grains. |
| Ext. rhei | .. | .. | .. | .. | 12 grains. |
| Saponis | .. | .. | .. | .. | 6 grains. |
| Ol. cinnam. | .. | .. | .. | .. | 4 ʒl. |

To make 24 pills.

Or stronger, with calomel:—

| | | | | | |
|-----------------|----|----|----|----|------------|
| Ext. coloc. eo. | .. | .. | .. | .. | 80 grains. |
| Scammony | .. | .. | .. | .. | 20 grains. |
| Calomel | .. | .. | .. | .. | 24 grains. |
| Ol. cinnam. | .. | .. | .. | .. | 6 ʒl. |

To make 24 pills.

Egg Powder is baking powder with, say 30 grains of turmeric to each pound. Baking powder is a mixture of ½ lb. tartaric acid and ¾ lb. bicarbonate of soda mixed with 1½ lb. flour.

H. M.—We expect that any unregistered person selling any of the scheduled poisons, even as homoeopathic medicines, might be convicted under the Pharmacy Act. Certainly this would be the case if the stronger preparations were supplied, that is to say, if a sufficient quantity of the poison were present for an analyst to detect. The Pharmaceutical Council is the only body which can prosecute.

Inquirer.—Dr. Paris gives the formula of Marshall's cerate thus:—

| | | | | | | | | | | |
|-----------------------------|----|----|----|----|----|----|----|----|----|--------|
| | .. | .. | .. | .. | .. | .. | .. | .. | .. | Ounces |
| Palm oil | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 |
| Calomel | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Acetate of lead | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| Nitrate of mercury ointment | .. | .. | .. | .. | .. | .. | .. | .. | .. | ½ |

H. P.—(1.) Cleansing Drinks.—Resin, soap, spermaceti, and ginger, of each ½ oz.; aniseed and caraway, of each 1 oz.; turmeric, 4 ozs. To be given in a quart of warm gruel. We have known chemists who added a few drops of oil of savin, but we think this is objectionable. Better than anything after calving is to give the cow—

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|--------|
| | .. | .. | .. | .. | .. | .. | .. | .. | .. | Ounces |
| Epsom salts | .. | .. | .. | .. | .. | .. | .. | .. | .. | 12 |
| Aniseed powder | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Olive oil | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 |

with a pint of warm gruel. (2.) Proctor's "Lectures on Practical Pharmacy" (Churchill, 12s.). (3.) You can get the lens at any optician's.

Scruple.—(1.) The following is Dr. Garrod's formula for gout pills:—

| | | | | | | | | | | |
|-------------------|----|----|----|----|----|----|----|----|----|--------|
| | .. | .. | .. | .. | .. | .. | .. | .. | .. | Grains |
| Ext. colch. acet. | .. | .. | .. | .. | .. | .. | .. | .. | .. | vj. |
| Ext. rhei | .. | .. | .. | .. | .. | .. | .. | .. | .. | vj. |
| Ext. aloes soc. | .. | .. | .. | .. | .. | .. | .. | .. | .. | vj. |
| Ext. belladonnae | .. | .. | .. | .. | .. | .. | .. | .. | .. | j. |

mit. pil. vi. sumat i. nocte bis hebdomad. (2.) Lavender water was discussed in our Notes and Queries last February. (3.) Crystalline pomade is made with spermaceti and castor oil (3 ozs. to 1 lb.) by letting the mixture cool in glass jars without any agitation.

Brewer will probably get what he wants from Mr. E. P. Hornby, of Stockport, or from Mr. G. H. Lloyd, of Bilston. In future these specially business queries must go through our Exchange Column.

Honey of Roses.—Infuse one pound of red rose leaves in four pints of boiling water, macerate 12 hours, express and filter. Infuse the residue in five pints of boiling water, express and filter. Dissolve six pounds of good honey in the second liquor and boil till it becomes a thick syrup, skimming from time to time. Add, gradually, the first infusion to the boiling syrup, skimming as before; when thoroughly incorporated, strain.